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344061

CONTRACT AGREEMENT

THIS CONTRACT AGREEMENT ("Agreement") made the 24th day of August 2010

BETWEEN

The President of India acting through the Director General, Unique Identification Authority of India (UIDAI) (hereinafter referred to as "Purchaser") which expression shall unless repugnant to the context or meaning thereof mean and be deemed to include its authorized agents, representatives and permitted assigns of the One Part.

AND

The Party M/s L-1 Identity Solutions Operating Company Private Limited, a company incorporated under the Indian Companies Act 1956 having its registered office at 2, Frontline Grandeur, 14 Walton Road, Bangalore 560001 (hereinafter referred to as "L-1 India"), a subsidiary of L-1 Identity Solutions Operating Company, a Delaware U.S.A. corporation (identified in Purchaser's Bid Document as the "Prime Consortium Member" and "Prime Bidder" and hereinafter referred to as "Biometric Solution Provider" or "BSP"), which expression shall unless repugnant to the context or meaning thereof mean and be deemed to include its successors and permitted assigns of the Other Part.

L-1 Identity Solutions Operating Company Private Limited

B.B. Nanavati, DGO

708

South
500

Unique Identification Authority of India
(Planning Commission)
Tower - II, 3rd Floor
Jeevan Bharti Building
Connaught Circus
New Delhi - 1

ADDRESS
PURPOSE
SIGNATURE
23 AUG 2010
R. APPROVAL LIC NO 12
HIGH COURT JUDGMENT STREET
NEW DELHI-110001

WHEREAS

(a) The Purchaser had invited bids vide their Bid Document number: **Bid No. D-11018/14/Tech/10-UIDAI** for providing certain services, namely, **Design, Supply and Implementation of Biometric Solution" for Unique Identification Authority of India** (hereinafter referred to as "Bid Document");

(b) The BSP had submitted its proposal dated 21.06.2010 (hereinafter referred to as the 'Bid') for the provision of such services in accordance with BSPs proposal as set out in its Bid and in accordance with the terms and conditions of the RFP and this Agreement;

(c) The Purchaser has agreed to appoint the BSP for the provision of such services and the BSP has agreed to provide those services as are represented in the Bid, including the terms of this Agreement, the Annexures and Scope attached hereto and in accordance with the terms of the Bid, and in terms of the discussions, negotiations and clarifications in relation to the implementation of the scope of work and the Agreement;

(d) While the BSP is bound to all of the provisions of this Agreement, in accordance with the requirements of the Purchaser's Bid Document (Section II, clause 34.5) and the Purchaser's earlier issued Invitation for Expression of Interest (clause 4.3(ii).b), the BSP established L-1 India for the purposes of signing this Agreement with the Purchaser;

(e) In consideration of the foregoing and the mutual covenants and promises contained herein and other good and valuable consideration the receipt and adequacy of which is hereby acknowledged, the parties intending to be bound legally, for implementation of this Agreement;

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the General Conditions of Contract referred to;

2. The following documents and the provisions thereof shall be deemed to form and be read and construed as part of this Agreement (hereinafter the "Contract") viz:

a.	General Conditions of Contract	Annexure A
b.	Special Conditions	Annexure B
c.	Service Level Agreement (SLA)	Annexure C
d.	Work Allocation & Service Level	Annexure D
e.	Scope of Work Annexure thereto	Annexure E

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f.	Minimum Requirements	Annexure F
g.	Letter for withdrawing the Deviations	Annexure G
h.	Break-up of cost components	Annexure H
i.	Non Disclosure Agreement	Annexure I
j.	Clarifications dated 5th, 7th, 15th, 16th of June 2010 issued by the Purchaser	
k.	Technical Bid submitted by BSP	Annexure J
l.	Commercial Bid submitted by BSP	Annexure K
m.	Acceptance Letter of L1 Bidder commercial quote	Annexure L
n.	The Purchaser's order dated 30th July 2010	Annexure M

3. In consideration of the payments to be made by the Purchaser to L-1 India as hereinafter mentioned, the BSP hereby covenants with the Purchaser to provide the Goods/ Services and to remedy defects therein in conformity in all respects with the provisions of the Contract. Brief particulars of the goods and / or services which shall be supplied/ provided by the BSP along with cost/charges thereof are as per **Annexure H;**

4. The Purchaser hereby covenants to pay L-1 India in consideration of the provision of the Services and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract;

5. The Parties intend for the entire provisions of each of the aforesaid documents to be read together harmoniously to form the Contract and to regulate their relationship *inter se*. In the event of any conflict in the provisions of the above listed documents, the order of precedence of the provisions thereof shall be in the order as set out above;

6. Subject to the rules of dynamic allocation as per **Annexure D – Work allocation & Service Levels** and any mutually agreed upon Change Orders between the parties, the Contract Value shall not exceed **Rs.33,87,50,000/- (Rupees Thirty Three Crores Eighty Seven Lakh Fifty Thousand Only)**(inclusive of all Taxes) for an estimated maximum of 10.50 crore Allotted Enrolment Transactions after successful de-duplication, at the cost of Rs.2.75 (Rupees Two and Paise Seventy Five only) (inclusive of all Taxes) per Allotted Enrolment Transaction. The aforesaid total Contract value includes the amount of Rs. 5,00,00,000/- (Rupees Five Crore Only) towards delivery, installation and acceptance of hardware for both primary and business continuity sites of UIDAI for de-duplications of an estimated capacity of first 3(one) crore Allotted Enrolments Transactions;

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Planning Commission, Jeewan Bhara
Connaught Circus, New Delhi-1100

7. This Contract and its stipulated obligations and conditions shall be effective from 30.07.2010 (hereinafter "the said date") i.e. the date of issue of Firm Orders and shall be valid initially for a period of **two (2) years or completion of 20 Crores enrollment transactions, whichever is earlier,** from the said date;

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with their respective laws the day and year first above written.

Signed, Sealed and Delivered for & on behalf of M/s L-1 Identity Solutions Operating Company Private Limited

Signed

Name: Machiel van der Harst

Designation: Technical Officer

Date: August 24th, 2010
Place: New Delhi

Signed, Sealed and Delivered for and on behalf of the President of India acting through the Director General, Unique Identification Authority of India.

Signed

Name: B. B. Nanawati, DDG

Designation: Deputy Director General

Date: August 24th, 2010
Place: New Delhi

In the presence of:

Signed

Name: Kalidindi R N R
Designation: Director, Business Development, L1 ID
Date: August 24th, 2010
Place: New Delhi

In the presence of:

Signed

Name: Ajay Nandan
Designation: Assistant Director General Unique Identification Authority of India, Planning Commission, Yojna Bhawan Bharati, Connaught Circus, New Delhi-110001
Date: August 24th, 2010
Place: New Delhi

Annexure A
General Conditions of Contract

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Planning Commission, Jeevan Bharati,
Connaught Circus, New Delhi-110001

General Conditions of Contract

1. Definitions

In this Contract, the following terms shall be interpreted as indicated:

I. **"Acceptance of Bid"** means the letter/fax or any memorandum communicating to the bidder, the acceptance of his bid, and includes an advance acceptance of his bid.

II. **"Business Day"** means any day that is not a Sunday or a public holiday (as per the official holidays observed by UIDAI).

III. The **"Biometric Solution Provider"** means the successful bidder whose bid has been accepted by the Purchaser and with whom the order for providing a **turnkey solution towards** Design, Supply and Implementation of Biometric Matching Services has been placed as per requirements and terms and conditions specified in this Bid/contract and shall be deemed to include successors of M/s L-1 Identity Solutions Operating Company, representatives (approved by the Purchaser), heirs, executors, administrators and permitted assigns, as the case may be, unless excluded by the terms of the contract. "Biometric Solution Provider" or "BSP" in this contract refers to M/s L-1 Identity Solutions Operating Company.

IV. **"Biometric Solution Provider's Team"** means the Successful Bidder alone or along with all of its consortium members, who have to provide goods & services to the Purchaser under the scope of this Bid / Contract. This definition shall also include any and/or all of the employees of the Prime Consortium Member, consortium members, authorized service providers/partners/agents and representatives or other personnel employed or engaged either directly or indirectly by the Biometric Solution Provider for the purposes of this Bid / Contract. "Biometric Solution Provider's team" or "BSP's team" in this contract refers to the team of M/s L-1 Identity Solutions Operating Company

V. **"Biometric Solution Provider's Representative/ Project Coordinator"** means the person or the persons appointed by the Biometric Solution Provider from time to time to act on its behalf for overall co-ordination, supervision and project management.

VI. **"Confidential Information"** means any information disclosed to or by any Party to this Contract and includes any information in relation to the Parties, a third party any other person any such information that may come to the knowledge of the

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Parties hereto / Biometric Solution Provider's Team by virtue of this Contract that:

a. is by its nature confidential or by the circumstances in which it is disclosed confidential; or

b. is designated by the disclosing Party as confidential or identified in terms connoting its confidentiality;

but does not include information which is or becomes public knowledge other than by a breach of this Contract;

VII. **"The Purchaser"** means the President of India acting through the Director General, Unique Identification Authority of India (UIDAI), Planning Commission, Government o India

VIII. **"Purchase Officer"** means the officer signing the acceptance of bid and includes any officer who has authority to execute the relevant contract on behalf of the Purchaser.

IX. **"UIDAI"**, means the Director General, Unique Identification Authority of India (UIDAI) or any other representative authorized by the Director General.

X. **"Document"** means any embodiment of any text or image however recorded and includes any data, text, images, sound, voice, codes or and databases or microfilm or computer generated micro fiche.

XI. **"Purchaser's Representative/Project Coordinator"** means the person or the persons appointed by the Purchaser from time to time to act on its behalf for overall co-ordination, supervision and project management.

XII. **"Primary Site"** means the Central ID Data Repository ("CIDR") Data Center in Delhi that would house the Information and Communication Technology (ICT) equipment required for carrying out the centralized operations of CIDR.

XIII. **"BCP Site"** means the Business Continuity Site of the CIDR located at a Data Centre in Bangalore that would house ICT equipment similar to the Primary site and which would be capable of running business operations of the CIDR in case of an eventuality.

XIV. **"Datacenter Sites"** means the Primary and BCP site of the CIDR including their respective Data Center space, Communications Room and Non-Data Centre space wherein the delivery, installation, integration, management and maintenance services as specified under the **Annexure E - Scope of Work** are to be carried out for the purpose of this Contract. Each individually referred to as Datacenter Site and collectively as Datacenter Sites.

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Connaught Circus, New Delhi - 110001

XV. **"Prime Consortium Member"** means the Prime Member of the Consortium, in case of a consortium bid. For the purpose of this contract **Prime Consortium Member** means the **Biometric Solution Provider.**

XVI. **"Parties"** means the Purchaser and, the Biometric Solution Provider, and **"Party"** means either of the Parties.

XVII. **"Contract"** means the Agreement entered into between the Purchaser and the Biometric Solution Provider including all attachments and Annexes thereto, the Bid and all Annexes thereto and the agreed terms as set out in the Bid, all documents incorporated by reference therein and amendments and modifications to the above from time to time.

XVIII. **"De-Duplication"** means assurance through biometric comparisons that no enrolled person has been assigned more than one Unique ID number.

XIX. **"Enrolment Transactions"** mean the transaction to perform de-duplication check in order to establish if there exists any duplicate(s) for the subject to be enrolled.

XX. **"Allotted Enrolment Transactions"** mean the transaction allocated to a Biometric Solution to perform de-duplication in order to check if there exist any duplicate(s) for the subject being enrolled.

XXI. **"Goods"** means all of the equipment, sub-systems, hardware, software, products accessories and/or other material / items which the Biometric Solution Provider is required to supply, install and maintain under the contract.

XXII. **"System"** means all of the goods under the scope of this contract together as an integrated solution.

XXIII. **"Commissioning of System"**: The system shall be deemed to have been commissioned, when all the activities as defined in **Clause 9.3** under **Annexure E - Scope of Work** have been successfully executed and completed.

XXIV. **"Acceptance of System"**: The system shall be deemed to have been accepted by the Purchaser, subsequent to its commissioning, when all the activities as defined in **Clause 10** under **Annexure E - Scope of Work** have been successfully executed and completed.

XXV. **"Effective Date"** means the date on which this Contract is signed and executed by the parties hereto. If this Contract is executed in parts, then the date on which the last of such Contracts is executed shall be construed to be the Effective Date;

XXVI. **"Intellectual Property Rights"** means any patent, copyright, trademark, trade name, service marks, brands, propriety information, UIDAI Application Software

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whether arising before or after the execution of this Contract and the right to ownership and registration of these rights.

XXVII. **"Kick Off Meeting"** means a meeting convened by the Purchaser to discuss and finalize the work execution plan and procedures with the Biometric Solution Provider.

XXVIII. **"Service"** means services to be provided as per the **Annexure E - Scope of Work** as specified in this bid document and incidental services, such as design, supply and implementation or any other such obligations of the Biometric Solution Provider covered under the Contract. In addition to this, the definition would also include other related/ancillary services that may be required to execute the Scope of Work under this contract.

XXIX. **"Service Specification"** means and includes detailed description, statements to technical data, performance characteristics, and standards (Indian as well as International) as applicable and as specified in the Contract, as well as those specifications relating to Industry standards and codes applicable to the performance of the work, work performance quality and specifications affecting the work or any additional specification required to be produced by the Biometric Solution Provider to meet the design criteria/ and/ or contract requirements.

XXX. **"The Contract Value"** means the sum of:
a) The unit price per Allotted Enrolment Transactions times maximum of 10.5 Crore Allotted Enrolment Transactions, subject to the rules of dynamic allocation as per **Annexure D – Work allocation & Service Levels,** during Contract period and;
b) The amount of **Rs 5,00,00,000/- (Rupees Five Crore Only)** towards delivery, installation and acceptance of hardware for both primary and business continuity sites of UIDAI for de-duplications of an estimated capacity of first 1(one) Crore Allotted Enrolments Transactions.

XXXI. **"Notice" means:**

i. a notice; or
ii. a consent, approval or other communication required to be in writing under this Contract.

2. **Interpretation**

In this Contract unless a contrary intention is evident:

a. the clause headings are for convenient reference only and do not form part of this Contract;
b. unless otherwise specified a reference to a clause number is a reference to all of its sub-clauses;

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c. unless otherwise specified a reference to a clause, sub-clause or section is a reference to a clause, sub-clause or section of this Contract including any amendments or modifications to the same from time to time;

d. a word in the singular includes the plural and a word in the plural includes the singular;

e. a word importing a gender includes any other gender;

f. a reference to a person includes a partnership and a body corporate;

g. a reference to legislation includes legislation repealing, replacing or amending that legislation;

h. where a word or phrase is given a particular meaning it includes the appropriate grammatical forms of that word or phrase which have corresponding meanings.

i. in the event of an inconsistency between the terms of this Contract and the Bid, the terms hereof shall prevail.

3. Conditions Precedent

3.1 This Contract is subject to the fulfillment of the following conditions precedent by M/s L-1 Identity Solutions Operating Company.

a. Furnishing of an unconditional, irrevocable and continuing Bank Guarantee of the sum of Rs. 2,88,75,000, in a form and manner acceptable to the Purchaser which would remain valid until such time and be renewable as may be stipulated by the Purchaser.

b. Execution of a Deed of Indemnity in terms of **Clause 16** of this Contract

c. Obtaining of all statutory and other approvals required for the performance of the Services under this Contract. This may include approvals/clearances, wherever applicable, that may be required for execution of this contract e.g. clearances from Government authorities for importing equipment, exemption of Tax/Duties/Levies, work permits/clearances for M/s L-1 Identity Solutions Operating Company / the team of M/s L-1 Identity Solutions Operating Company, etc.

d. Where the designated M/s L-1 Identity Solutions Operating Company is a subsidiary of a company or a member of a group of companies or is a joint venture company or is special purpose vehicle (SPV) [formed to execute the obligations under this Contract] and where the Purchaser may specify (on account of the failure of M/s L-1 Identity Solutions Operating Company to fulfill all selection criteria specified in the Bid), the parent or flagship company/ majority shareholder of such M/s L-1 Identity Solutions Operating Company having furnished an unconditional, irrevocable and continuing guarantee of an amount equivalent to Rs. 2,88,75,000 on behalf of M/s L-1 Identity Solutions

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Operating Company in a form and manner acceptable to the Purchaser which would remain valid until such time, beyond the term of the Contract, as may be stipulated by the Purchaser.

e. All the members of the Consortium shall have executed a binding Consortium Contract / Agreement a notarized copy of which shall have been delivered to the Purchaser.

f. All the members of the Consortium shall have executed a Power of Attorney authorizing the Prime Consortium Member to act for and on behalf of the Consortium members, a notarized copy of which shall have been delivered to the Purchaser.

g. Furnishing of such other documents as the Purchaser may specify

The Purchaser reserves the right to waive any or all of the conditions specified in Clause 3.1 above in writing and no such waiver shall affect or impair any right, power or remedy that the Purchaser may otherwise have.

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Planning Commission, Jeevan Bharati,
Connaught Circus, [illegible]

Operating Company Private Limited * L-1 Identity Solutions

4. Scope of Work / Contract

4.1 Scope of the Work/ Contract shall be as defined in **Annexure E – Scope of Work** and Annexes thereto of this Bid Document.

4.2 Purchaser has engaged M/s L-1 Identity Solutions Operating Company for Design, Supply and Implementation of Biometric Matching Services for UIDAI using which the Purchaser intends to perform its business operations. M/s L-1 Identity Solutions Operating Company is required to provide such goods, services and support as the Purchaser may deem proper and necessary, during the Terms of this Contract, and includes all such processes and activities which are consistent with the proposals set forth in the Bid, the Bid Document and this Contract and are deemed necessary by the Purchaser, in order to meet its business requirements (hereinafter 'Scope of Work').

5. Key Performance Measurements

5.1 Unless specified by the Purchaser to the contrary, M/s L-1 Identity Solutions Operating Company shall deliver the goods, perform the Services and carry out the Scope of Work in accordance with the scope of this Contract, Scope of Work and the Service Specifications as laid down under **Annexure C – Service Level Agreement** to General Conditions of Contract.

5.2 The service specifications, as mentioned in Scope of Work of requirements of this Contract includes the requirements of the Purchaser, and any other requirements as are necessary to execute the Scope of Work under this Contract. If the Contract / Service Specification include more than one document, then unless the Purchaser specifies to the contrary, the later in time shall prevail over a document of earlier date to the extent of any inconsistency.

5.3 The Purchaser reserves the right to amend any of the terms and conditions in relation to the Contract / Service Specifications and may issue any such directions which are not necessarily stipulated therein if it deems necessary for the fulfillment of the Scope of Work.

6. Commencement and progress

6.1 M/s L-1 Identity Solutions Operating Company shall subject to the fulfillment of the conditions precedent set out in **Clause 3** above, commence the performance of it's obligations in a manner as specified in the Scope of Work and Service Specifications.

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6.2 M/s L-1 Identity Solutions Operating Company shall proceed to carry out the activities / services with diligence and expedition in accordance with any stipulation as to the time, manner, mode, and method of execution contained in this Contract.

6.3 The Prime Consortium Member shall be responsible for and shall ensure that all activities / services are performed in accordance with the Contract, Scope of Work and Service Specifications and that the team of M/s L-1 Identity Solutions Operating Company complies with such Specifications and all other standards, Terms and other stipulations/conditions set out hereunder.

6.4 M/s L-1 Identity Solutions Operating Company shall perform the activities / services and carry out it's obligations under the Contract with due diligence, efficiency and economy, in accordance with generally accepted techniques and practices used in the industry and with professional engineering and consulting standards recognized by international professional bodies and shall observe sound management, engineering and security practices. It shall employ appropriate advanced technology and engineering practices and safe and effective equipment, machinery, material and methods. M/s L-1 Identity Solutions Operating Company shall always act, in respect of any matter relating to this Contract, as faithful advisors to the Purchaser and shall, at all times, support and safeguard the Purchaser's legitimate interests in any dealings with Third parties.

6.5 Standards: The Goods supplied under this Contract shall conform to the standards mentioned in the Technical Specifications, and, when no applicable standard is mentioned, to the authoritative standards, such standard shall be the latest issued by the concerned institution. Delivery of the Goods shall be made by M/s L-1 Identity Solutions Operating Company in accordance with the terms specified by the Purchaser in its Notification of Award / Purchase Order.

7. Constitution of Consortium

7.1 For the purposes of fulfillment of it's obligations as laid down under the Contract where the Purchaser deems fit and unless the context requires otherwise, M/s L-1 Identity Solutions Operating Company shall refer to the Prime Consortium Member who shall be the sole point of interface between the Purchaser and M/s L-1 Identity Solutions Operating Company and would be absolutely accountable for the performance of its own, the other members of Consortium and/or its Team's functions and obligations.

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7.2 The Consortium members agree that the Prime Consortium Member shall be the prime point of contact between the Consortium members and the Purchaser and shall be primarily responsible for the discharge and administration of all the obligations contained herein and, the Purchaser, unless it deems necessary shall deal only with the Prime Consortium Member.

7.3 The Purchaser reserves the right to review, approve and require amendment of the terms of the Consortium Contract or any contract or agreements entered into by and between the members of such Consortium and no such agreement/contract shall be executed, amended, modified and/or terminated without the prior written consent of the Purchaser. An executed copy of each of such agreements/contracts shall, immediately upon execution be submitted by M/s L-1 Identity Solutions Operating Company to the Purchaser.

7.4 In case of a breach of any of the terms hereof, unless the Purchaser decides otherwise, the each member of the Consortium including the Prime Bidder shall have liability individually to the extent of the 'Scope of Work', the proceedings for which are accrued by the consortium members respectively.. A notice of at least 2 months in advance is required to be given by the Prime Consortium Member to the Purchaser if during the terms of this Contract, the Prime Consortium Member desires to terminate any contract/arrangement relating to the performance of Services hereunder with any member of his Consortium.

7.5 Where, during the terms of this Contract, the Prime Consortium Member terminates any contract/arrangement or agreement relating to the performance of Services hereunder with a member of the Consortium (subject to approval by the Purchaser), the Prime Consortium Member shall be severally liable for all consequences resulting from such termination.. The Prime Consortium Member shall in such case ensure the smooth continuation of Services by providing a suitable replacement subject to approval and to the satisfaction of the Purchaser at no additional charge and at the earliest opportunity.

8. Sub – Contract

The Prime Consortium Member shall not be permitted to appoint any delegate/subcontractor for the performance of required services under this contract

In case any part of the work / services under this contract is required to be assigned by Prime Consortium Member to a third party, the same should be included as a

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Consortium member of M/s L-1 Identity Solutions Operating Company and must be declared at the time of bidding.

9. **Obligations of M/s L-1 Identity Solutions Operating Company**

9.1 The obligations of M/s L-1 Identity Solutions Operating Company shall include Design, Supply and Implementation of Biometric Matching Services, for UIDAI, as per the Scope of Work/ Contract and changes thereof to enable the UIDAI to meet the objectives and operational requirements. It shall be the responsibility of M/s L-1 Identity Solutions Operating Company to ensure the proper and successful implementation, performance and continued operation of the proposed solution in accordance with and in strict adherence to the terms of this Contract.

9.2 M/s L-1 Identity Solutions Operating Company shall be responsible to the Purchaser for meeting all obligations of the consortium for executing the Scope of Work and meeting all obligations of this bid. M/s L-1 Identity Solutions Operating Company shall also be the sole point of contact for all matters relating to this Contract.

9.3 M/s L-1 Identity Solutions Operating Company shall ensure that the team of M/s L-1 Identity Solutions Operating Company is competent, professional and possesses the requisite qualifications and experience appropriate to the task they are required to perform under this Contract. M/s L-1 Identity Solutions Operating Company shall ensure that the Services are performed through the efforts of the team of M/s L-1 Identity Solutions Operating Company, in accordance with the terms hereof and to the satisfaction of the Purchaser. Nothing in this Contract relieves M/s L-1 Identity Solutions Operating Company from its liabilities or obligations under this Contract to provide the Services in accordance with the Purchaser's directions and requirements and as stated in this Contract and the Bid to the extent accepted by the Purchaser and M/s L-1 Identity Solutions Operating Company shall be liable for any non-performance, non-compliance, breach or other loss and damage resulting either directly or indirectly by or on account of its Team.

9.4 M/s L-1 Identity Solutions Operating Company shall arrange at respective Datacenter Sites and UIDAI Locations, at no extra cost to the Purchaser, desktops, printers, stationary, tools, equipment, etc. that may be required by his team during the contract period for performance of Services under this contract.

9.5 The representative(s) of M/s L-1 Identity Solutions Operating Company shall have all the power requisite for and performance of services under this contract. Representative(s) of M/s L-1 Identity Solutions Operating Company shall liaise with

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the Purchaser's Representative for the proper coordination and timely completion of the works and on any other matters pertaining to the works. He will extend full co-operation to Purchaser's representative in the manner required by them for supervision/inspection/observation of the equipment/goods/ material, procedures, performance, progress, reports and records pertaining to the good/ services. He shall also have complete charge of the personnel of M/s L-1 Identity Solutions Operating Company engaged in the performance of the services and to ensure compliance of rules, regulations and safety practice. He shall also cooperate with the other Service Providers/Vendors of the Purchaser working at the Datacenter Sites and UIDAI Locations. Such representative(s) of M/s L-1 Identity Solutions Operating Company shall be available to the Purchaser's Representative at respective Datacenter Site and UIDAI location during the execution of Scope of Work under this Contract.

9.6 M/s L-1 Identity Solutions Operating Company shall be responsible, on an ongoing basis for coordination with other vendors and agencies of the Purchaser in order to resolve issues and oversee implementation of the same. M/s L-1 Identity Solutions Operating Company shall also be responsible for resolving conflicts between vendors in case of borderline integration issues.

9.7 Access to Installation Sites

9.7.1 The Purchaser's representative upon receipt of request from M/s L-1 Identity Solutions Operating Company intimating commencement of installation at Datacenter Site shall give to M/s L-1 Identity Solutions Operating Company access to the Datacenter Site as may be necessary to enable M/s L-1 Identity Solutions Operating Company to commence and proceed with the installation of the works in accordance with the programme of work. Any such request as specified above shall have the prior approval of UIDAI. Any reasonable proposal of M/s L-1 Identity Solutions Operating Company for access to Site to proceed with the installation of work in accordance with the programme of work will be considered for approval and shall not be unreasonably withheld by the Purchaser. Such requests shall be made to the Purchaser's representative in writing at least 7 days prior to start of the work.

9.7.2 At the respective UIDAI Location, the Purchaser's representative shall give to M/s L-1 Identity Solutions Operating Company access to the UIDAI Location as may be necessary to enable M/s L-1 Identity Solutions Operating Company to commence and proceed with the installation of the works in accordance with the programme of work.

B.B. Nanawati, Adv.

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9.8 **Start of Installation**

9.8.1 Before commencement of installation at respective Datacenter Sites, M/s L-1 Identity Solutions Operating Company shall carry out proper planning and co-ordination with other vendors viz, Datacentre Service Provider and Application Software Development, Maintenance Support (ASDMSA) Agency and others as relevant in order to prepare the installation plan and detailed design documents. **(Refer to Clause 10.2 and 10.3 of Annexure E for details)**

9.8.2 The plan and design documents thus developed shall be submitted by M/s L-1 Identity Solutions Operating Company to the Purchaser for approval.

9.8.3 After obtaining the approval from the Purchaser, M/s L-1 Identity Solutions Operating Company shall commence the installation.

9.8.4 Prior to taking up installation of any major component of work, M/s L-1 Identity Solutions Operating Company shall submit to Purchaser the proposed procedures and obtain Purchaser's approval in writing.

9.9 **Reporting Progress**

9.9.1 M/s L-1 Identity Solutions Operating Company shall monitor progress of all the activities related to the execution of this contract and shall submit to the Purchaser, at no extra cost, **progress reports** with reference to all related work, milestones and their progress during the implementation phase on a **weekly basis.**

9.9.2 Post implementation, M/s L-1 Identity Solutions Operating Company shall submit to the Purchaser, **MIS reports** on an ongoing basis. An indicative list of such reports along with their periodicity are mentioned in **Clause 10.9.4 'MIS Reports' under Annexure E - Scope of Work.**

9.9.3 The above reports mentioned under **Clause 9.9.1 and Clause 9.9.2** are required to be submitted in **2 hard copies** along with **2 soft copies**. Extracts of these reports to be termed, as **"Executive Summary"** shall also be submitted in 2 copies, both in hard and soft format.

9.9.4 Formats for all abovementioned reports and their dissemination mechanism shall be discussed and finalized at the Kick-Off meeting. The Purchaser on mutual agreement between both parties may change the formats, periodicity and dissemination mechanism for such reports.

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9.9.5 Periodic meetings shall be held between the representatives of the Purchaser and M/s L-1 Identity Solutions Operating Company once in every 15 days during the implementation phase to discuss the progress of implementation. After the implementation phase is over, the meeting shall be held on an ongoing basis, once in every 30 days to discuss the performance of the contract.

9.9.6 M/s L-1 Identity Solutions Operating Company shall ensure that the respective solution teams involved in the execution of work are part of such meetings.

9.9.7 A high level **Steering Committee** involving representatives of the Purchaser and senior officials of M/s L-1 Identity Solutions Operating Company (including the Managing Director, Country Head and Operational Head) shall be formed for the purpose of this contract. This committee shall meet at intervals, as decided by the Purchaser later, to oversee the progress of the project.

9.9.8 All the goods, services and manpower to be provided / deployed by M/s L-1 Identity Solutions Operating Company under the Contract and the manner and speed of execution and maintenance of the work and services are to be conducted in a manner to the satisfaction of Purchaser's representative in accordance with the Contract.

9.9.9 The Purchaser reserves the right to inspect and monitor/assess the progress/performance of the work / services at any time during the course of the Contract. The Purchaser may demand and upon such demand being made, M/s L-1 Identity Solutions Operating Company shall provide documents, data, material or any other information which the Purchaser may require, to enable it to assess the progress/performance of the work / service.

9.9.10 At any time during the course of the Contract, the Purchaser shall also have the right to conduct, either itself or through another agency as it may deem fit, an audit to monitor the performance by M/s L-1 Identity Solutions Operating Company of its obligations/functions in accordance with the standards committed to or required by the Purchaser and M/s L-1 Identity Solutions Operating Company undertakes to cooperate with and provide to the Purchaser/ any other agency appointed by the Purchaser, all Documents and other details as may be required by them for this purpose. Such audit shall not include books of accounts of M/s L-1 Identity Solutions Operating Company.

9.9.11 Should the rate of progress of the works or any part of them at any time fall behind the stipulated time for completion or is found to be too slow to ensure

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completion of the works by the stipulated time, or is in deviation to Bid requirements/ standards, the Purchaser's representative shall so notify M/s L-1 Identity Solutions Operating Company in writing.

9.9.12 M/s L-1 Identity Solutions Operating Company shall reply to the written notice giving details of the measures he proposes to take to expedite the progress so as to complete the works by the prescribed time or to ensure compliance to Contract requirements. M/s L-1 Identity Solutions Operating Company shall not be entitled to any additional payment for taking such steps. If at any time, should it appear to the Purchaser or Purchaser's representative that the actual progress of work does not conform to the approved programme, M/s L-1 Identity Solutions Operating Company shall produce at the request of the Purchaser's representative a revised programme showing the modification to the approved programme necessary to ensure completion of the works within the time for completion or steps initiated to ensure compliance to the stipulated requirements

9.9.13 The submission seeking approval of the Purchaser or Purchaser's representative of such programme shall not relieve M/s L-1 Identity Solutions Operating Company of any of his duties or responsibilities under the Contract.

9.9.14 In case during execution of works, the progress falls behind schedule or does not meet the Contract requirements, M/s L-1 Identity Solutions Operating Company shall deploy extra manpower/ resources to make up the progress or to meet the Contract requirements. Programme for deployment of extra man power/ resources shall be submitted to the Purchaser for its review and approval, which approval shall not be unreasonably withheld. All time and cost effect in this respect shall be borne, by M/s L-1 Identity Solutions Operating Company within the contract value.

9.10 **Knowledge of Datacenter Site conditions**

9.10.1 M/s L-1 Identity Solutions Operating Company shall be granted access to the Datacenter Sites for inspection by the Purchaser before commencement of installation. The plan shall be drawn mutually at a later stage.

9.10.2 M/s L-1 Identity Solutions Operating Company shall be deemed to have knowledge of the Datacenter Site and its surroundings and information available in connection therewith and to have satisfied itself the form and nature thereof including, the physical and climatic conditions, the quantities and nature of the works and materials necessary for the completion of the works, the means of

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access, etc. and in general to have obtained itself all necessary information of all risks, contingencies and circumstances affecting his obligations and responsibilities therewith under the Contract and his ability to perform it. However, if during pre-installation survey / during delivery or installation, M/s L-1 Identity Solutions Operating Company detects physical conditions and/or obstructions affecting the work, M/s L-1 Identity Solutions Operating Company shall take all measures to overcome them.

9.11 Project Charter

9.11.1 After the release of Purchase Order under this Contract or prior to kick-off meeting whichever is earlier, M/s L-1 Identity Solutions Operating Company shall submit to the Purchaser for its approval, a detailed Project Charter showing the sequence, procedure and method in which he proposes to carry out the works as stipulated under **Clause 9.12 of Annexure E – Scope of Work** as per the this contract and shall, whenever reasonably required by the Purchaser's Representative furnish in writing the arrangements and methods proposed to be made for carrying out the works. The Project Charter so submitted by M/s L-1 Identity Solutions Operating Company shall conform to the requirements and timelines specified in the Contract. The Purchaser and M/s L-1 Identity Solutions Operating Company shall discuss and agree upon the work procedures to be followed for effective execution of the works, which M/s L-1 Identity Solutions Operating Company intends to deploy and shall be clearly specified. Approval by the Purchaser's Representative of a Project Charter shall not relieve M/s L-1 Identity Solutions Operating Company of any of his duties or responsibilities under the Contract.

9.11.2 However, if the work plans of M/s L-1 Identity Solutions Operating Company necessitate a disruption/ shutdown in Purchaser's operation, the plan shall be mutually discussed and developed so as to keep such disruption/shutdown to the barest unavoidable minimum. Any time and cost effect arising due to failure of M/s L-1 Identity Solutions Operating Company to develop/adhere such a work plan shall be to his account.

9.12 Project Organisation of M/s L-1 Identity Solutions Operating Company

9.12.1 M/s L-1 Identity Solutions Operating Company shall supply to the Purchaser for its approval, within 5 calendar days after the release of Purchase Order under this Contract or prior to the kick-off meeting whichever is earlier, an organization chart showing the proposed organization/manpower to be established by M/s L-1

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Identity Solutions Operating Company for execution of the work including the identities and Curriculum-Vitae of the key personnel to be deployed. M/s L-1 Identity Solutions Operating Company shall promptly inform the Purchaser, in writing, of any revision or alteration of such organization charts.

9.12.2 M/s L-1 Identity Solutions Operating Company should to the best of his efforts, avoid any change in the organization structure proposed for execution of this contract or replacement of any manpower resource appointed at the Datacenter Sites and UIDAI Locations. If the same is however unavoidable, due to circumstances such as the resource leaving the organization of M/s L-1 Identity Solutions Operating Company, M/s L-1 Identity Solutions Operating Company shall promptly inform the Purchaser in writing, and the same shall require subsequent approval by the Purchaser.

9.12.3 In case of replacement of any manpower resource, M/s L-1 Identity Solutions Operating Company should ensure efficient knowledge transfer from the outgoing resource to the incoming resource and adequate hand-holding period and training for the incoming resource in order to maintain the continued level of service.

9.12.4 All manpower resources deployed by M/s L-1 Identity Solutions Operating Company for execution of this contract must strictly adhere to the attendance reporting procedures and make their services available for the entire reporting time period at respective Datacenter Sites, UIDAI Locations or any location designated by the Purchaser.

9.12.5 M/s L-1 Identity Solutions Operating Company shall provide at the respective Datacenter site necessary supervision during the execution of work and as long thereafter as the Purchaser may consider necessary for the proper fulfillment of the obligations of M/s L-1 Identity Solutions Operating Company under the Contract. M/s L-1 Identity Solutions Operating Company or his competent and authorized representative(s) shall be constantly present at the respective Datacenter Site whole time for supervision. M/s L-1 Identity Solutions Operating Company shall authorize his representative to receive directions and instructions from the Purchaser's Representative.

9.12.6 M/s L-1 Identity Solutions Operating Company shall be responsible for the deployment, transportation, accommodation and other requirements of all its employees required for the execution of the work and provision of services for all costs/charges in connection thereof.

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9.12.7 M/s L-1 Identity Solutions Operating Company shall provide and deploy, at the Datacenter Site or UIDAI Location for carrying out the work, only those manpower resources who are qualified/skilled and experienced in their respective trades and who are competent to deliver in a proper and timely manner the work they are required to perform or to manage/supervise the work.

9.12.8 The Purchaser's Representative may at any time object to and require M/s L-1 Identity Solutions Operating Company to remove forthwith from the Datacenter Site or UIDAI Location any authorized representative or employee of M/s L-1 Identity Solutions Operating Company or any person(s) of the team of M/s L-1 Identity Solutions Operating Company, if, in the opinion of the Purchaser's Representative the person in question has mis-conducted or his / her deployment is otherwise considered undesirable by the Purchaser's Representative. M/s L-1 Identity Solutions Operating Company shall forthwith remove and shall not again deploy the person without the written consent of the Purchaser's Representative.

9.12.9 The Purchaser's Representative may at any time object to and request M/s L-1 Identity Solutions Operating Company to remove from the Datacenter Site or UIDAI Location any of authorized representative of M/s L-1 Identity Solutions Operating Company including any employee of M/s L-1 Identity Solutions Operating Company or his team or any person(s) deployed by M/s L-1 Identity Solutions Operating Company or his team for professional incompetence or negligence or for being deployed for work for which he is not suited. M/s L-1 Identity Solutions Operating Company shall consider the Purchaser's Representative request and may accede to or disregard it. The Purchaser's Representative, having made a request, as aforesaid in the case of any person, which M/s L-1 Identity Solutions Operating Company has disregarded, may in the case of the same person at any time but on a different occasion, and for a different instance of one of the reasons referred to above in this Clause object to and require M/s L-1 Identity Solutions Operating Company to remove that person from deployment on the work, which M/s L-1 Identity Solutions Operating Company shall then forthwith do and shall not again deploy any person so objected to on the work or on the sort of work in question (as the case may be) without the written consent of the Purchaser's Representative.

9.12.10 The Purchaser's Representative shall state to M/s L-1 Identity Solutions Operating Company in writing his reasons for any request or requirement pursuant to this clause.

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9.12.11 M/s L-1 Identity Solutions Operating Company shall promptly replace every person removed, pursuant to this section, with a competent substitute, and at no extra cost to the Purchaser.

9.13 **Adherence to safety procedures, rules regulations and restriction**

9.13.1 The team of M/s L-1 Identity Solutions Operating Company shall comply with the provision of all laws including labour laws, rules, regulations and notifications issued there under from time to time. All safety and labour laws enforced by statutory agencies and by Purchaser shall be applicable in the performance of this Contract and The team of M/s L-1 Identity Solutions Operating Company shall abide by these laws.

9.13.2 Access to the Datacenter Sites and UIDAI Locations shall be strictly restricted. No access to any person except the essential members of the team of M/s L-1 Identity Solutions Operating Company who are genuinely required for execution of work or for carrying out management/maintenance who have been explicitly authorised by the Purchaser shall be allowed entry to the Datacenter Sites and UIDAI Locations. Even if allowed, access shall be restricted to the pertaining equipment of the Purchaser only. M/s L-1 Identity Solutions Operating Company shall maintain a log of all activities carried out by each of its team personnel.

9.13.3 M/s L-1 Identity Solutions Operating Company shall take all measures necessary or proper to protect the personnel, work and facilities and shall observe all reasonable safety rules and instructions. The team of M/s L-1 Identity Solutions Operating Company shall adhere to all security requirement/regulations of the Purchaser during the execution of the work. Purchaser's employee shall also comply with safety procedures/policy.

9.13.4 M/s L-1 Identity Solutions Operating Company shall report as soon as possible any evidence, which may indicate or is likely to lead to an abnormal or dangerous situation and shall take all necessary emergency control steps to avoid such abnormal situations.

9.14 **Statutory Requirements:**

9.14.1 During the tenure of this Contract nothing shall be done by M/s L-1 Identity Solutions Operating Company or his team in contravention of any law, act and/ or rules/regulations, thereunder or any amendment thereof governing inter-alia customs, stowaways, foreign exchange and any other laws as applicable and shall keep Purchaser indemnified in this regard.

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10. Contract administration

10.1 No variation or modification of the terms of the contract shall be made except by written amendment signed by the parties.

10.2 Either party may appoint any individual / organization as their authorized representative through a written notice to the other party. Each Representative shall have the authority to:

a. exercise all of the powers and functions of his/her Party under this Contract other than the power to amend this Contract and ensure the proper administration and performance of the terms hereof; and

b. bind his or her Party in relation to any matter arising out of or in connection with this Contract.

10.3 M/s L-1 Identity Solutions Operating Company along with the members of Consortium /third parties shall be bound by all undertakings and representations made by the authorized representative of M/s L-1 Identity Solutions Operating Company and any covenants stipulated hereunder, with respect to this Contract, for and on their behalf.

10.4 For the purpose of execution or performance of the obligations under this Contract, the Purchaser's representative would act as an interface with the nominated representative of M/s L-1 Identity Solutions Operating Company. M/s L-1 Identity Solutions Operating Company shall comply with any instructions that are given by the Purchaser's representative during the course of this Contract in relation to the performance of its obligations under the terms of this Contract.

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11. Purchaser's Obligations

11.1 UIDAI shall act as the nodal point for implementation of the contract and for issuing necessary instructions, approvals, commissioning, acceptance certificates, payments etc. to M/s L-1 Identity Solutions Operating Company.

11.2 Purchaser shall ensure that timely approval is provided to M/s L-1 Identity Solutions Operating Company as and when required, which may include approval of project plans, implementation methodology, design documents, specifications, or any other document necessary in fulfillment of this contract.

11.3 The Purchaser shall approve all such documents within 15 working days.

11.4 The Purchaser's Representative shall interface with M/s L-1 Identity Solutions Operating Company, to provide the required information, clarifications, and to resolve any issues as may arise during the execution of the Contract. Purchaser shall provide adequate cooperation in providing details, coordinating and obtaining of approvals from various governmental agencies, in cases, where the intervention of the Purchaser is proper and necessary.

11.5 The Purchaser may provide on request of M/s L-1 Identity Solutions Operating Company, particulars/information/ or documentation that may be required by M/s L-1 Identity Solutions Operating Company for proper planning and execution of work and for providing services covered under this contract and for which M/s L-1 Identity Solutions Operating Company may have to coordinate with respective vendors.

11.6 Purchaser shall provide to M/s L-1 Identity Solutions Operating Company, sitting space and infrastructure (utilities, telephone lines) at Datacenter Sites and UIDAI Location as decided by the Purchaser.

12. Payments

12.1 Purchaser shall make payments only to M/s L-1 Identity Solutions Operating Company **(Prime Consortium Member)** at the times and in the manner set out in the **Clause 46** - Payment subject to the fulfillment by M/s L-1 Identity Solutions Operating Company of the obligations herein. Purchaser will make all efforts to make payments to M/s L-1 Identity Solutions Operating Company within 30 days of receipt of invoice(s) along with all necessary supporting documents.

12.2 Purchaser shall make all payments under this Contract, as set out in the Payment clause to M/s L-1 Identity Solutions Operating Company only and shall not be liable

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to make any payments or for any other related obligation under this contract to any other party including but not limited to the consortium members/ vendors of M/s L-1 Identity Solutions Operating Company or any other member of The team of M/s L-1 Identity Solutions Operating Company or any third party engaged by M/s L-1 Identity Solutions Operating Company in any way connected with the discharge of the obligation of M/s L-1 Identity Solutions Operating Company under the Contract and in any manner whatsoever. M/s L-1 Identity Solutions Operating Company shall be fully liable and responsible for meeting all such obligations and all payments to be made to the aforesaid entities/parties.

12.3 All payments agreed to be made by Purchaser to M/s L-1 Identity Solutions Operating Company in accordance with the Contract shall be inclusive of all statutory levies, duties, taxes and other charges whenever levied/applicable including costs of maintenance, if any and Purchaser shall not be liable to pay any such levies/other charges under or in relation to this Contract and/or the Services.

12.4 Payment shall be paid at the times and in the manner set out in the Payment schedule as specified under to **Clause 46** against value of contract. However, Service Tax shall be reimbursed against submission of payment proofs. Works contract taxes, if any applicable, shall be reimbursed against actual and against submission of payment proofs.

12.5 In case of change in taxes under change in law, appropriate parties shall be passed the benefit of the same over and above the contract value. In case of such change, M/s L-1 Identity Solutions Operating Company shall submit a formal request with necessary supporting documents to the Purchaser. The Purchaser shall verify these documents and if applicable and approved in writing by the Purchaser, M/s L-1 Identity Solutions Operating Company shall incorporate such changes into subsequent regular invoice for payment.

12.6 No invoice for extra work/change order on account of change order will be submitted by M/s L-1 Identity Solutions Operating Company unless the said extra work /change order has been authorized/approved by the Purchaser in writing in accordance with **Clause 35**.

12.7 In the event of Purchaser noticing at any time that any amount has been disbursed wrongly to M/s L-1 Identity Solutions Operating Company or any other amount is due from M/s L-1 Identity Solutions Operating Company to the Purchaser, the Purchaser may without prejudice to its rights recover such amounts by other means after notifying M/s L-1 Identity Solutions Operating Company or deduct such amount from

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any payment falling due to M/s L-1 Identity Solutions Operating Company. The details of such recovery, if any, will be intimated to M/s L-1 Identity Solutions Operating Company. M/s L-1 Identity Solutions Operating Company shall receive the payment of undisputed amount under subsequent invoice for any amount that has been omitted in previous invoice by mistake on the part of the Purchaser or M/s L-1 Identity Solutions Operating Company.

12.8 **Deductions:**

12.8.1 All payments to M/s L-1 Identity Solutions Operating Company shall be subject to the deductions of tax at source under Income Tax Act, and other taxes, and deductions as provided for under any law, rule or regulation. All costs, damages or expenses which Purchaser may have paid or incurred, for which under the provisions of the Contract, M/s L-1 Identity Solutions Operating Company is liable, the same shall be deducted by Purchaser from any dues to M/s L-1 Identity Solutions Operating Company. All payments to M/s L-1 Identity Solutions Operating Company shall be made after making necessary deductions as per terms of the Contract and recoveries towards facilities, if any, provided by the Purchaser to M/s L-1 Identity Solutions Operating Company on chargeable basis.

12.9 **Duties, Taxes and Statutory levies.**

12.9.1 M/s L-1 Identity Solutions Operating Company shall bear all personnel taxes levied or imposed on its personnel, Vendors, consultants, or any other member of The team of M/s L-1 Identity Solutions Operating Company, etc. on account of payment received under this Contract. M/s L-1 Identity Solutions Operating Company shall bear all corporate taxes, levied or imposed on M/s L-1 Identity Solutions Operating Company on account of payments received by it from the Purchaser for the work done under this Contract.

12.9.2 M/s L-1 Identity Solutions Operating Company shall bear all taxes and duties etc. levied or imposed on M/s L-1 Identity Solutions Operating Company under the Contract including but not limited to Sales Tax, Customs duty, Excise duty, Octroi, Service Tax, VAT, Works Contracts Tax and all Income Tax levied under Indian Income Tax Act – 1961 or any amendment thereof upto the date for submission of final price bid, i.e., on account of payments received by him from the Purchaser for work done under the Contract. It shall be the responsibility of M/s L-1 Identity Solutions Operating Company to submit to the concerned Indian authorities the returns and all other connected documents required for this purpose. M/s L-1 Identity Solutions Operating Company shall also provide the

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Purchaser such information, as it may be required in regard to details of payment made to M/s L-1 Identity Solutions Operating Company by the Purchaser under the Contract for proper assessment of taxes and duties. The amount of tax withheld by the Purchaser shall at all times be in accordance with Indian Tax Law and the Purchaser shall promptly furnish to M/s L-1 Identity Solutions Operating Company original certificates (Challans) for tax deduction at source and paid to the Tax Authorities.

12.9.3 If there is any upward or downward revision in taxes / duties due to any reason whatsoever, after Notification of Award, the same shall be passed on to the appropriate party.

12.9.4 M/s L-1 Identity Solutions Operating Company agrees that he and his Team shall comply with the Indian Income Tax act in force from time to time and pay Indian Income Tax, as may be imposed / levied on them by the Indian Income Tax Authorities, for the payments received by them for the works under the Contract.

12.9.5 Should M/s L-1 Identity Solutions Operating Company fail to submit returns/pay taxes in times as stipulated under the Indian Income Tax Act and consequently any interest or penalty is imposed by the Indian Income Tax authority, M/s L-1 Identity Solutions Operating Company shall pay the same. M/s L-1 Identity Solutions Operating Company shall indemnify Purchaser against any and all liabilities or claims arising out of this Contract for such taxes including interest and penalty any such Tax Authority may assess or levy against the Purchaser/M/s L-1 Identity Solutions Operating Company.

12.9.6 The Purchaser shall if so required by applicable laws in force, at the time of payment, deduct income tax payable by M/s L-1 Identity Solutions Operating Company at the rates in force, from the amount due to M/s L-1 Identity Solutions Operating Company and pay to the concerned tax authority directly.

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13. Intellectual Property Rights

13.1 Purchaser shall own and have a right in perpetuity to use all original, newly created processes, products, specifications, reports, drawings and other documents and Intellectual Property Rights therein which have been identified by M/s L-1 Identity Solutions Operating Company to Purchaser as newly developed solely during execution of this Contract to the Purchaser's unique specifications and which do not contain any pre-existing Intellectual Property Rights (including any M/s L-1 Identity Solutions Operating Company's proprietary algorithms) belonging to M/s L-1 Identity Solutions Operating Company, or its consortium members. M/s L-1 Identity Solutions Operating Company undertakes to disclose all such Intellectual Property Rights arising in performance of the Services to the Purchaser and execute all such agreements/documents and file all relevant applications, effect transfers and obtain all permits and approvals that may be necessary in this regard to effectively transfer and conserve the Intellectual Property Rights of the Purchaser. M/s L-1 Identity Solutions Operating Company and its consortium members shall retain proprietary ownership of all Intellectual Property Rights in and to those Goods, Services and other deliverables to the Purchaser under the Contract that are modifications or derivative works to their pre-existing technologies, software, goods, services and other works. To the extent that a modification or derivative work made by L-1 Identity Solutions Operating Company or its consortium members contains unique confidential information of Purchaser, then L-1 Identity Solutions Operating Company and its consortium members shall not further license or distribute such modification or derivative work to any other customer or third party other than the Purchaser without the Purchaser's prior written permission. The Contract and the licenses granted herein are not a sale of a copy of the software and do not render Purchaser the owner of M/s L-1 Identity Solutions Operating Company's proprietary ABIS and SDK software. The software (Goods) delivered hereunder, which includes L-1 Identity Solutions Operating Company's proprietary software (containing proprietary algorithms) is licensed to the Purchaser in accordance with the express terms of L-1 Identity Solutions Operating Company's licensing policy in its Technical Bid.

13.2 If Purchaser desires, further, M/s L-1 Identity Solutions Operating Company shall be obliged to ensure that all approvals, registrations, licenses, permits and rights etc. which are inter-alia necessary for use of the goods supplied / installed by M/s L-1 Identity Solutions Operating Company, the same shall be acquired in the name of the

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Purchaser, prior to termination of this Contract and which may be assigned by the Purchaser to M/s L-1 Identity Solutions Operating Company for the purpose of execution of any of its obligations under the terms of the Bid, Bid or this Contract. However, subsequent to the term of this Contract, such approvals, registrations, licenses, permits and rights etc. shall endure to the exclusive benefit of the Purchaser

13.3 M/s L-1 Identity Solutions Operating Company / The team of M/s L-1 Identity Solutions Operating Company shall ensure that while it uses any software, hardware, processes, document or material in the course of performing the Services, it does not infringe the Intellectual Property Rights of any person and M/s L-1 Identity Solutions Operating Company shall keep the Purchaser indemnified against all costs, expenses and liabilities howsoever, arising out any illegal or unauthorized use (piracy) or in connection with any claim or proceedings relating to any breach or violation of any permission/license terms or infringement of any Intellectual Property Rights by M/s L-1 Identity Solutions Operating Company or the team of M/s L-1 Identity Solutions Operating Company during the course of performance of the Services. In case of any infringement by M/s L-1 Identity Solutions Operating Company / The team of M/s L-1 Identity Solutions Operating Company, M/s L-1 Identity Solutions Operating Company shall have sole control of the defense and all related settlement negotiations.

13.4 **Information Security**

13.4.1 M/s L-1 Identity Solutions Operating Company / The team of M/s L-1 Identity Solutions Operating Company shall not carry any written/printed document, layout diagrams, floppy diskettes, hard disk, storage tapes, other storage devices or any other goods /material proprietary to Purchaser into / out of Datacenter Sites and UIDAI Locations without written permission from the Purchaser.

13.4.2 M/s L-1 Identity Solutions Operating Company / The team of M/s L-1 Identity Solutions Operating Company shall not destroy any unwanted documents, defective tapes/media present at the Datacenter Sites or UIDAI Locations on their own. All such documents, tapes/media shall be handed over to the Purchaser.

13.4.3 All documentation and media at the respective Datacenter Sites shall be properly identified, labeled and numbered by M/s L-1 Identity Solutions Operating Company. M/s L-1 Identity Solutions Operating Company shall keep track of all such items and provide a summary report of these items to the Purchaser on a monthly basis.

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13.4.4 M/s L-1 Identity Solutions Operating Company and The team of M/s L-1 Identity Solutions Operating Company shall follow Purchaser's Information Security policy. Access to Purchaser's data and systems, Email and Internet facility by M/s L-1 Identity Solutions Operating Company / the team of M/s L-1 Identity Solutions Operating Company at any of the Datacenter Site or UIDAI Location shall be in accordance with the security and access policies set by the Purchaser.

13.4.5 M/s L-1 Identity Solutions Operating Company and The team of M/s L-1 Identity Solutions Operating Company acknowledge that Purchaser's business data and other Purchaser proprietary information or materials, whether developed by Purchaser or being used by Purchaser pursuant to a license agreement with a third party (the foregoing collectively referred to herein as "proprietary information") are confidential and proprietary to Purchaser; and M/s L-1 Identity Solutions Operating Company along with its team agrees to use reasonable care to safeguard the proprietary information and to prevent the unauthorized use or disclosure thereof, which care shall not be less than that used by M/s L-1 Identity Solutions Operating Company to protect its own proprietary information. M/s L-1 Identity Solutions Operating Company recognizes that the goodwill of Purchaser depends, among other things, upon M/s L-1 Identity Solutions Operating Company keeping such proprietary information confidential and that unauthorized disclosure of the same by M/s L-1 Identity Solutions Operating Company or its team could damage the goodwill of Purchaser, and that by reason of duties of M/s L-1 Identity Solutions Operating Company hereunder. M/s L-1 Identity Solutions Operating Company may come into possession of such proprietary information, even though M/s L-1 Identity Solutions Operating Company does not take any direct part in or furnish the services performed for the creation of said proprietary information and shall limit access thereto to employees with a need to such access to perform the services required by this agreement. M/s L-1 Identity Solutions Operating Company shall use such information only for the purpose of performing the said services.

13.4.6 M/s L-1 Identity Solutions Operating Company shall, upon termination of this agreement for any reason, or upon demand by Purchaser, whichever is earliest, return any and all information provided to M/s L-1 Identity Solutions Operating Company by Purchaser, including any copies or reproductions, both hardcopy and electronic.

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13.5 Records of Contract Documents:

13.5.1 M/s L-1 Identity Solutions Operating Company shall at all time make and keep sufficient copies of the Contract documents, manuals, reference material, drawings, specifications and any other document required by him to fulfill his duties under the Contract.

13.5.2 M/s L-1 Identity Solutions Operating Company shall keep at each Datacenter Site and UIDAI Location, adequate number of copies of all documents required to fulfill his duties under the Contract, in excess of his own requirement and those copies shall be available at all times for use by the Purchaser's Representative and/or by any other person authorized by the Purchaser's Representative.

14. Ownership and Retention of Documents

14.1 The Purchaser shall own the Documents, proposed by or for M/s L-1 Identity Solutions Operating Company arising out of or in connection with this Contract.

14.2 The Documents shall be retained by M/s L-1 Identity Solutions Operating Company not more than a period of 7 years as per Retention Policy of Government of India or any other policy that UIDAI may adopt in future.

14.3 Forthwith upon expiry or earlier termination of this Contract and at any other time on demand by the Purchaser, M/s L-1 Identity Solutions Operating Company shall deliver to the Purchaser all Documents provided by or originating from the Purchaser and all Documents produced by or from or for M/s L-1 Identity Solutions Operating Company in the course of performing the Services, unless otherwise directed in writing by the Purchaser at no additional cost. M/s L-1 Identity Solutions Operating Company shall not, without the prior written consent of the Purchaser store, copy, distribute or retain any such Documents.

15. Data and Hardware

15.1 By virtue of this Contract, M/s L-1 Identity Solutions Operating Company / The team of M/s L-1 Identity Solutions Operating Company may have access to personal information of the Purchaser and/or a third party or any resident of India, any other person covered within the ambit of any legislation as may be applicable. The Purchaser shall have the sole ownership of and the right to use, all such data in perpetuity including any data or other information pertaining to the residents of India that may be in the possession of M/s L-1 Identity Solutions Operating Company

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or The team of M/s L-1 Identity Solutions Operating Company in the course of performing the Services under this Contract.

15.2 The Purchaser shall have the sole ownership of and the right of use, proprietary Biometric templates of residents of India as created and maintained by M/s L-1 Identity Solutions Operating Company in the course of performing the Services under this Contract. In the event of termination or expiry of contract, M/s L-1 Identity Solutions Operating Company shall transfer all the proprietary templates to UIDAI in an electronic storage media in a form that is freely retrievable for reference and usage in future.

15.3 The Data shall be retained by M/s L-1 Identity Solutions Operating Company not more than a period of 7 years as per Retention Policy of Government of India or any other policy that UIDAI may adopt in future.

16. Indemnity

16.1 M/s L-1 Identity Solutions Operating Company shall execute and furnish to the Purchaser, a Deed of Indemnity in favour of the Purchaser in a form and manner acceptable to the Purchaser, indemnifying the Purchaser from and against any costs, loss, damages, expense, claims including those from third parties or liabilities of any kind howsoever suffered, arising or incurred inter alia during and after the Contract period out of:

a. any negligence or wrongful act or omission by M/s L-1 Identity Solutions Operating Company or the team of M/s L-1 Identity Solutions Operating Company or any third party associated with M/s L-1 Identity Solutions Operating Company in connection with or incidental to this Contract; or

b. any breach of any of the terms of the bid of M/s L-1 Identity Solutions Operating Company as agreed, the Bid and this Contract by M/s L-1 Identity Solutions Operating Company, the team of M/s L-1 Identity Solutions Operating Company or any third party.

c. any infringement of patent, trademark/copyright or industrial design rights arising from the use of the supplied goods and related services or any part thereof.

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16.2 M/s L-1 Identity Solutions Operating Company shall also indemnify the Purchaser against any privilege, claim or assertion made by a third party with respect to right or interest in, ownership, mortgage or disposal of any asset, property, movable or immovable as mentioned in any Intellectual Property Rights, licenses and permits.

17. Representations and Warranties

17.1 In order to induce the Purchaser to enter into this Contract, M/s L-1 Identity Solutions Operating Company hereby represents and warrants as of the date hereof, which representations and warranties shall survive the term and termination hereof, the following:

(a) That the selected M/s L-1 Identity Solutions Operating Company along with its consortium members have the power and the authority that would be required to enter into this Contract and the requisite experience, the technical know-how and the financial wherewithal required to successfully execute the terms of this contract and to provide services sought by the Purchaser under this contract

(b) That M/s L-1 Identity Solutions Operating Company and its Consortiums Members are not involved in any major litigation or legal proceedings, pending, existing, potential or threatened, that may have an impact of affecting or compromising the performance or delivery of Services under this Contract.

(c) That the representations and warranties made by M/s L-1 Identity Solutions Operating Company in the Contract are and shall continue to remain true and correct throughout the term of this Contract and M/s L-1 Identity Solutions Operating Company shall fulfill all the requirements as are necessary for executing the obligations and responsibilities as laid down in the Contract and the Bid and unless the Purchaser specifies to the contrary, M/s L-1 Identity Solutions Operating Company shall be bound by all the terms of the Bid.

(d) That M/s L-1 Identity Solutions Operating Company and its team has the professional skills, personnel, infrastructure and resources/authorizations that are necessary for providing all such services as are necessary to fulfill the Scope of Work stipulated in the Bid and this Contract.

(e) That M/s L-1 Identity Solutions Operating Company shall ensure that all assets/ components including but not limited to equipment, software, licenses, processes, documents, etc. installed, developed, procured, deployed and created during the term of this Contract are duly maintained and suitably updated, upgraded, replaced with regards to contemporary requirements.

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(f) That M/s L-1 Identity Solutions Operating Company /The team of M/s L-1 Identity Solutions Operating Company shall use such assets of the Purchaser as the Purchaser may permit for the sole purpose of execution of its obligations under the terms of the Bid, Bid or this Contract. M/s L-1 Identity Solutions Operating Company shall however, have no claim to any right, title, lien or other interest in any such property, and any possession of property for any duration whatsoever shall not create any right in equity or otherwise, merely by fact of such use or possession during or after the term hereof.

(g) That M/s L-1 Identity Solutions Operating Company shall procure all the necessary permissions and adequate approvals and licenses for use of various software and any copyrighted process/product free from all claims, titles, interests and liens thereon and shall keep the Purchaser indemnified in relation thereto.

(h) That the execution of the Scope of Work and the Services herein is and shall be in accordance and in compliance with all applicable laws.

(i) That M/s L-1 Identity Solutions Operating Company has the corporate power to execute, deliver and perform the terms and provisions of this Contract and has taken all necessary corporate action to authorise the execution, delivery and performance by it of the Contract.

(j) That all conditions precedent under the Contract have been satisfied.

(k) That neither the execution and delivery by M/s L-1 Identity Solutions Operating Company /Team of M/s L-1 Identity Solutions Operating Company of the Contract nor the compliance with or performance of M/s L-1 Identity Solutions Operating Company /compliance with or performance of Team of M/s L-1 Identity Solutions Operating Company, of the terms and provisions of the Contract (i) will contravene any provision of any Applicable Law or any order, writ, injunction or decree of any court or Governmental Authority binding on M/s L-1 Identity Solutions Operating Company, (ii) will conflict or be inconsistent with or result in any breach of any or the terms, covenants, conditions or provisions of, or constitute a default under any agreement, contract or instrument to which M/s L-1 Identity Solutions Operating Company is a party or by which it or any of its property or assets is bound or to which it may be subject or (iii) will violate any provision of the Memorandum and Articles of Association of M/s L-1 Identity Solutions Operating Company.

(l) That M/s L-1 Identity Solutions Operating Company certifies that all registrations, recordings, filings and notarisations of the Contract and all payments of any tax or duty, including but not limited to stamp duty, registration charges or similar amounts which are required to be effected or made by M/s L-1 Identity Solutions Operating Company which is necessary to ensure the legality, validity, enforceability or admissibility in evidence of the Contract have been made.

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(m) That M/s L-1 Identity Solutions Operating Company confirms that there has not and shall not occur any execution, amendment or modification of any agreement/contract without the prior written consent of the Purchaser, which may directly or indirectly have a bearing on the Contract or the project.

(n) That M/s L-1 Identity Solutions Operating Company owns or has good, legal or beneficial title, or other interest in, to the property, assets and revenues of M/s L-1 Identity Solutions Operating Company on which it grants or purports to grant or create any interest pursuant to the Contract, in each case free and clear of any encumbrance and further confirms that such interests created or expressed to be created are valid and enforceable.

(o) That M/s L-1 Identity Solutions Operating Company owns, has license to use or otherwise has the right to use, free of any pending or threatened liens or other security or other interests all Intellectual Property Rights, which are required or desirable for the performance of the project under this contract and regarding the same M/s L-1 Identity Solutions Operating Company does not, so far as M/s L-1 Identity Solutions Operating Company is aware, in carrying on its business and operations, infringe any Intellectual Property Rights of any person. So far as M/s L-1 Identity Solutions Operating Company is aware, none of the Intellectual Property Rights owned or enjoyed by M/s L-1 Identity Solutions Operating Company or which M/s L-1 Identity Solutions Operating Company is licensed to use, which are material in the context of the business of M/s L-1 Identity Solutions Operating Company and operations for the performance of this contract are being infringed nor, so far as M/s L-1 Identity Solutions Operating Company is aware, is there any infringement or threatened infringement of those Intellectual Property Rights licensed or provided to M/s L-1 Identity Solutions Operating Company by any person. All Intellectual Property Rights (owned by M/s L-1 Identity Solutions Operating Company or which M/s L-1 Identity Solutions Operating Company is licensed to use) required by M/s L-1 Identity Solutions Operating Company for the performance of the contract are valid and subsisting. All actions (including registration, payment of all registration and renewal fees) required to maintain the same in full force and effect have been taken thereon and shall keep the Purchaser indemnified in relation thereto. The remedy for any breach of this clause shall be the indemnity set forth in **Clause 13.3** for Intellectual Property Rights.

(p) *This clause (18.1.p) is intentionally left blank.*

(q) That M/s L-1 Identity Solutions Operating Company agrees to incorporate, within the contract value, all hardware configuration, software changes, upgrades and patches to the system, announced by him from time to time keeping in view the

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advancement in technology, shortcomings of the system and any changes required for improving the overall efficiency of the system.

(r) That M/s L-1 Identity Solutions Operating Company shall provide adequate and appropriate support and participation, on a continuing basis, in tuning all supplied hardware and software to meet the requirements of the applications.

(s) If and when the system and/or components of the system are required to be relocated / shifted within the same Datacenter Site or to a new Datacenter Site, M/s L-1 Identity Solutions Operating Company shall undertake required work related for de-commissioning / re-commissioning and other associated work, at no additional cost to the Purchaser. Associated cost for transportation, insurance and packing shall however be borne by the Purchaser. For any such relocation / shifting efforts beyond two such occurrences during the contract period, extra charges shall be mutually agreed upon.

18. Confidentiality

18.1 M/s L-1 Identity Solutions Operating Company / Team of M/s L-1 Identity Solutions Operating Company shall not use Confidential Information, the name or the logo of the Purchaser except for the purposes of execution of this contract.

Confidential information does not include information which:

i. M/s L-1 Identity Solutions Operating Company / Team of M/s L-1 Identity Solutions Operating Company knew or had in its possession, prior to disclosure, without limitation on its confidentiality;
ii. is independently developed by M/s L-1 Identity Solutions Operating Company / Team of M/s L-1 Identity Solutions Operating Company without breach of conditions under this Contract;
iii. information in the public domain as a matter of law;
iv. is received from a third party not subject to the obligation of confidentiality with respect to such information;
v. is released from confidentiality with the written consent of UIDAI.

M/s L-1 Identity Solutions Operating Company / Team of M/s L-1 Identity Solutions Operating Company shall have the burden of proving hereinabove are applicable to the information in the possession of M/s L-1 Identity Solutions Operating Company / Team of M/s L-1 Identity Solutions Operating Company.

18.2 M/s L-1 Identity Solutions Operating Company / Team of M/s L-1 Identity Solutions Operating Company shall not, either during the term or after expiration of this Contract, disclose any proprietary or confidential information relating to the Services/Contract and/or Purchaser's business/ operations, information, Application/software, hardware, business

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data, architecture schematics, designs, storage media and other information / documents without the prior written consent of the Purchaser.

18.3 M/s L-1 Identity Solutions Operating Company may only disclose Confidential Information in the following circumstances:

i. with the prior written consent of the Purchaser;

ii. to a member of the team of M/s L-1 Identity Solutions Operating Company if:

A. the member of the team of M/s L-1 Identity Solutions Operating Company needs the Confidential Information for the performance of obligations under this contract;

B. the member of the team of M/s L-1 Identity Solutions Operating Company is aware of the confidentiality of the Confidential Information and is obliged to use it only for the performance of obligations under this contract

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18.4 M/s L-1 Identity Solutions Operating Company shall do everything reasonably possible to preserve the confidentiality of the Confidential Information including execution of a confidentiality agreement with the consortium members and other members of Team of M/s L-1 Identity Solutions Operating Company to the satisfaction of the Purchaser.

18.5 M/s L-1 Identity Solutions Operating Company shall notify the Purchaser promptly if it is aware of any disclosure of the Confidential Information otherwise than as permitted by this Contract or with the authority of the Purchaser.

18.6 M/s L-1 Identity Solutions Operating Company shall do everything reasonably possible to preserve the confidentiality of the Confidential Information including execution of a confidentiality agreement with the consortium members and other members of Team of M/s L-1 Identity Solutions Operating Company to the satisfaction of the Purchaser.

18.7 M/s L-1 Identity Solutions Operating Company shall notify the Purchaser promptly if it is aware of any disclosure of the Confidential Information otherwise than as permitted by this Contract or with the authority of the Purchaser.

18.8 M/s L-1 Identity Solutions Operating Company shall be liable to fully recompense the Purchaser for any loss of revenue arising from breach of confidentiality. The Purchaser reserves the right to adopt legal proceedings, civil or criminal, against M/s L-1 Identity Solutions Operating Company / Team of M/s L-1 Identity Solutions Operating Company in relation to a dispute arising out of breach of obligation by M/s L-1 Identity Solutions Operating Company under this clause.

18.9 M/s L-1 Identity Solutions Operating Company and all members of the consortium shall execute a Annexure H - Non Disclosure Agreement (NDA), individually, in favour of the Purchaser.

19. Events of Default by M/s L-1 Identity Solutions Operating Company

19.1 The failure on the part of M/s L-1 Identity Solutions Operating Company to perform any of its obligations or comply with any of the terms of this Contract shall constitute an Event of Default on the part of M/s L-1 Identity Solutions Operating Company. The events of default as mentioned above may include inter-alia the following:

a. M/s L-1 Identity Solutions Operating Company/ Team of M/s L-1 Identity Solutions Operating Company has failed to perform any instructions or directives issued by the Purchaser which it deems proper and necessary to execute the Scope of Work or provide services under the Contract, or

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b. M/s L-1 Identity Solutions Operating Company/ Team of M/s L-1 Identity Solutions Operating Company has failed to confirm / adhere to any of the key performance indicators as laid down in the Key Performance Measures / Service Level Agreements, or if M/s L-1 Identity Solutions Operating Company has fallen short of matching such standards / benchmarks / targets as the Purchaser may have designated with respect to the system or any goods, task or service, necessary for the execution of the Scope of Work and performance of services under this Contract. The above mentioned failure on the part of M/s L-1 Identity Solutions Operating Company may be in terms of failure to adhere to performance, quality, timelines, specifications, requirements or any other criteria as defined by the Purchaser;

c. M/s L-1 Identity Solutions Operating Company has failed to remedy a defect or failure to perform its obligations in accordance with the specifications issued by the Purchaser, despite being served with a default notice which laid down the specific deviance on the part of M/s L-1 Identity Solutions Operating Company/ Team of M/s L-1 Identity Solutions Operating Company to comply with any stipulations or standards as laid down by the Purchaser; or

d. M/s L-1 Identity Solutions Operating Company/ Team of M/s L-1 Identity Solutions Operating Company has failed to adhere to any amended direction, instruction, modification or clarification as issued by the Purchaser during the term of this Contract and which the Purchaser deems proper and necessary for the execution of the Scope of Work under this Contract

e. M/s L-1 Identity Solutions Operating Company/ Team of M/s L-1 Identity Solutions Operating Company has failed to demonstrate or sustain any representation or warranty made by it in this Contract, with respect to any of the terms of its Bid, the Bid and this Contract

f. There is a proceeding for bankruptcy, insolvency, winding up or there is an appointment of receiver, liquidator, assignee, or similar official against or in relation to M/s L-1 Identity Solutions Operating Company.

g. M/s L-1 Identity Solutions Operating Company/Team of M/s L-1 Identity Solutions Operating Company has failed to comply with or is in breach or contravention of any applicable laws.

19.2 Where there has been an occurrence of such defaults inter alia as stated above, the Purchaser shall issue a notice of default to M/s L-1 Identity Solutions Operating Company,

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setting out specific defaults / deviances / omissions / non-compliances / non-performances and providing a notice of to enable such defaulting party to remedy the default committed.

19.3 Where despite the issuance of a default notice to M/s L-1 Identity Solutions Operating Company by the Purchaser M/s L-1 Identity Solutions Operating Company fails to remedy the default to the satisfaction of M/s L-1 Identity Solutions Operating Company, the Purchaser may, where it deems fit, issue to the defaulting party another default notice or proceed to adopt such remedies as may be available to the Purchaser.

20. Consequences of Event of Default

20.1 Where an Event of Default subsists or remains uncured the Purchaser shall be entitled to:

20.2 Impose any such obligations and conditions and issue any clarifications as may be necessary to inter alia ensure smooth continuation of project and the Services which M/s L-1 Identity Solutions Operating Company shall be obliged to comply with which may include re-determination of the consideration payable to M/s L-1 Identity Solutions Operating Company as agreed mutually by Purchaser and M/s L-1 Identity Solutions Operating Company or through a third party acceptable to both parties. M/s L-1 Identity Solutions Operating Company shall in addition take all available steps to minimize loss resulting from such event of default.

20.3 Suspend all payments to M/s L-1 Identity Solutions Operating Company under the Contract by a written notice of suspension to M/s L-1 Identity Solutions Operating Company, provided that such notice of suspension:

i. shall specify the nature of the failure; and

ii. shall request M/s L-1 Identity Solutions Operating Company to remedy such failure within a specified period from the date of receipt of such notice of suspension by M/s L-1 Identity Solutions Operating Company.

20.4 Require replacement of any of the Consortium Member(s) / Team member(s) of M/s L-1 Identity Solutions Operating Company with another suitable member(s) where the Purchaser deems necessary. M/s L-1 Identity Solutions Operating Company shall in such case terminate forthwith all their agreements/ contracts/ other arrangements with such member(s) and find suitable replacement for such outgoing member(s) with another member(s) to the satisfaction of the Purchaser, who shall execute such Contracts with the Purchaser as the Purchaser may require. Failure on the part of M/s L-1 Identity Solutions Operating Company to find a suitable replacement and/or terminate all agreements/contracts with such member(s), shall amount to a breach of the terms hereof and the Purchaser in addition to all other rights, have the right to claim damages and recover from M/s L-1 Identity Solutions

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Operating Company all losses/ or other damages that may have resulted from such failure.

20.5 **Terminate the Contract in part or in full**

20.5.1 Retain such amounts from the payment due and payable by the Purchaser to M/s L-1 Identity Solutions Operating Company as may be required to offset any losses caused to the Purchaser as a result of such event of default and M/s L-1 Identity Solutions Operating Company shall compensate the Purchaser for any such loss, damages or other costs, incurred by the Purchaser in this regard. Nothing herein shall effect the continued obligation of M/s L-1 Identity Solutions Operating Company and Team of M/s L-1 Identity Solutions Operating Company to perform all their obligations and responsibilities under this Contract in an identical manner as were being performed before the occurrence of the default.

20.5.2 Invoke the Performance Bank Guarantee and other Guarantees furnished hereunder, enforce the Deed of Indemnity, recover such other costs/losses and other amounts from M/s L-1 Identity Solutions Operating Company as may have resulted from such default and pursue such other rights and/or remedies that may be available to the Purchaser under law.

21. **Stipulated Time Schedule**

21.1 The key milestone dates ("critical dates")* as anticipated by the Purchaser are

S. N.	Milestone	Time for Completion
1.	a. Mobilization of Team b. Commencement of supply of hardware for 1 Crore enrolment c. Conduct a kick-off meeting with UIDAI with participation from key personnel proposed for the project to discuss the project plan for way forward d. Submission of plan for procurement, transportation, installation and commissioning of hardware in pilot data center e. Co-ordinate with Data Center service provider and prepare a blue print for deployment of hardware, ensure availability of power and other environmental	T + 1 Week

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S. N.	Milestone	Time for Completion
	facilities in the datacenter f. Set up the required Test and Production environments for the rollout of PoC. The hardware used for Solution Demonstration exercise as part of the RFP evaluation process could be used for the rollout of PoC, if found adequate to meet the requirements based on expected enrolment transactions. g. Begin to supply SDK perpetual licenses of the proposed multimodal SDK to cater to requirements as stated in sub-section 4. Solution Components h. Support ASDMSA in developing the client enrolment software through provisioning licensing, training and services. While M/s L-1 Identity Solutions Operating Company may utilize commercially reasonable copy protection means for the SDK, the SDK must not use hardware license key or keyed to ID (such as CPU, serial number, Ethernet ID) in a manner that unreasonably interferes with the Purchaser's licensed use of the SDK for its intended purpose. That is transparent to the software development, testing, installation and deployment; that is unfettered and transparent to the end user's use of the SDK developed application.	
2.	a. Setup of Test and Production Environment with a view to start the Proof of Concept for Biometrics Solution b. SDK integration with client enrolment software	T+ 1 Week
3.	Go-live of solution as Proof of Concept	T+2 Weeks

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S. N.	Milestone	Time for Completion
4.	**Go-live for 1 Crore enrolment** Activities leading to go-live shall include: a. Installation, commissioning and Configuration of the hardware for the 1 Crore enrolments b. Setup of Test and Production Environment with a view to start the Biometrics Solution for 1 Crore enrolment c. Installation, commissioning and configuration of Biometric Solution in Test Environment d. System & Integration Testing of the Solution e. Installation, commissioning and Configuration of Biometric Solution on hardware for 1 Crore enrolment in production environment (which is provisioned by the BSP) f. SDK API implementation g. SDK based verification (joint task of ASDMSA & BSP) h. SDK based adjudication workstation (assistance by BSP) i. SDK based monitoring and analysis functional (assistance by BSP) j. **Acceptance of the Solution**	T + 12 Weeks
5.	Commencement of adherence with SLA (SLA Activation)	T + 24 Weeks (G)
6.	Overall Solution Warranty -Warranty shall cover Software Patch update, upgrades, bug fixing and resolution of hardware and storage issues, backup.	G + 6 Months from SLA Activation

* May be amended by the Purchaser from time to time.

21.2 The Biometrics Solution Provider shall perform the activities and comply in all respects with the critical dates and the parties hereby agree that failure on part of the Biometrics Solution Provider, and other Consortium Members to meet the critical dates without prejudice to any other rights that the Purchaser may have, may lead to

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the imposition of such obligations as are laid down in the Delay and Deterrent Mechanism and/or levy of penalty as set **(refer Clause 43)** and/or termination of the Contract at the discretion of the Purchaser.

22. Term and Extension of the Contract

22.1 The term of this Contract shall be initially for a period of **two (2) years or completion of 20 Crores enrollment transactions whichever is earlier from the date of the award of contract,** according to the stipulated time schedules specified in **Clause 21.**

22.2 The Purchaser shall reserve the sole right to grant any extension to the term abovementioned and shall notify in writing to M/s L-1 Identity Solutions Operating Company, at least 6 months before the expiration of the Term hereof, whether it will grant M/s L-1 Identity Solutions Operating Company an extension of the Term. The decision to grant or refuse the extension shall be at the Purchaser's discretion and such extension of the contract, if any, shall be as per terms agreed mutually between the Purchaser and M/s L-1 Identity Solutions Operating Company.

22.3 Where the Purchaser is of the view that no further extension of the term be granted to M/s L-1 Identity Solutions Operating Company, the Purchaser shall notify M/s L-1 Identity Solutions Operating Company of its decision at least 6 (six) months prior to the expiry of the Term. Upon receipt of such notice, M/s L-1 Identity Solutions Operating Company shall continue to perform all its obligations hereunder, until such reasonable time beyond the Term of the Contract within which, the Purchaser shall either appoint an alternative agency/vendor or create its own infrastructure to operate such Services as are provided under this Contract.

23. Termination

23.1 The Purchaser may, terminate this Contract in whole or in part by giving M/s L-1 Identity Solutions Operating Company a prior and written notice indicating its intention to terminate the Contract under the following circumstances:

(a) Where the Purchaser is of the opinion that there has been such Event of Default on the part of M/s L-1 Identity Solutions Operating Company / Team of M/s L-1 Identity Solutions Operating Company which would make it proper and necessary to terminate this Contract and may include failure on the part of M/s L-1 Identity Solutions Operating Company to respect any of its commitments with regard to any part of its obligations under its Bid, the Bid or under this Contract.

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(b) Where it comes to the Purchaser's attention that M/s L-1 Identity Solutions Operating Company (or the team of M/s L-1 Identity Solutions Operating Company) is in a position of actual conflict of interest with the interests of the Purchaser, in relation to any of terms of Bid of M/s L-1 Identity Solutions Operating Company, the Bid or this Contract.

(c) Where M/s L-1 Identity Solutions Operating Company / any of Consortium members of M/s L-1 Identity Solutions Operating Company ability to survive as an independent corporate entity is threatened or is lost owing to any reason whatsoever, including inter-alia the filing of any bankruptcy proceedings against M/s L-1 Identity Solutions Operating Company or its consortium members, any failure by M/s L-1 Identity Solutions Operating Company or its consortium member to pay any of its dues to its creditors, the institution of any winding up proceedings against M/s L-1 Identity Solutions Operating Company / Consortium member of M/s L-1 Identity Solutions Operating Company or the happening of any such events that are adverse to the commercial viability of M/s L-1 Identity Solutions Operating Company / Consortium member of M/s L-1 Identity Solutions Operating Company. In the event of the happening of any events of the above nature, the Purchaser shall reserve the right to take any steps as are necessary, to ensure the effective transition of the project to a successor agency, and to ensure business continuity

(d) **Termination for Insolvency:** The Purchaser may at any time terminate the Contract by giving written notice to M/s L-1 Identity Solutions Operating Company, without compensation to M/s L-1 Identity Solutions Operating Company, if M/s L-1 Identity Solutions Operating Company / Consortium member of M/s L-1 Identity Solutions Operating Company become bankrupt or otherwise insolvent, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to the Purchaser.

(e) **Termination for Convenience:** The Purchaser, may, by written notice sent to M/s L-1 Identity Solutions Operating Company, terminate the Contract, in whole or in part at any time for its convenience. The notice of termination shall specify that termination is for the Purchaser's convenience, the extent to which performance of work under the Contract is terminated, and the date upon which such termination becomes effective.

23.2 M/s L-1 Identity Solutions Operating Company may, subject to approval by the Purchaser, terminate this Contract before the expiry of the term by giving the

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Purchaser a prior and written notice at least 12 months in advance indicating its intention to terminate the Contract.

24. Consequences of Termination

24.1 In the event of termination of this Contract pursuant to **Clause 23**, [whether consequent to the stipulated Term of the Contract or otherwise] the Purchaser shall be entitled to impose any such obligations and conditions and issue any clarifications as may be necessary to ensure an efficient transition and effective business continuity of the project which M/s L-1 Identity Solutions Operating Company shall be obliged to comply with and take all available steps to minimize loss resulting from that termination/breach, and further allow and provide all such assistance to the Purchaser and/or the successor agency, as may be required, to takeover the erstwhile obligations of the M/s L-1 Identity Solutions Operating Company in relation to the execution/continued execution of the scope of this Contract, even where such assistance is required to be rendered for a reasonable period that may extend beyond the contract term/ termination hereof.

24.2 In the event that the termination of this Contract is due to the expiry of the Term of this Contract / a decision not to grant any (further) extension by the UIDAI, or where the termination is prior to the expiry of the stipulated term due to the occurrence of any Event of Default on the part of M/s L-1 Identity Solutions Operating Company; M/s L-1 Identity Solutions Operating Company herein shall be obliged to provide all such assistance to the successor M/s L-1 Identity Solutions Operating Company or any other person as may be required and as the Purchaser may specify including training, where the successor(s) is a representative/personnel of the Purchaser to enable the successor to adequately provide the Services hereunder, even where such assistance is required to be rendered for a reasonable period that may extend beyond the Term/earlier termination hereof. Where the termination of the Contract is prior to its stipulated term on account of a Default on the part of M/s L-1 Identity Solutions Operating Company /Team of M/s L-1 Identity Solutions Operating Company or due to the fact that the survival of M/s L-1 Identity Solutions Operating Company as an independent corporate entity is threatened/has ceased, or for any other reason including termination for convenience pursuant to Clause 23.1(e), whatsoever, the Purchaser through re-determination of the consideration payable to M/s L-1 Identity Solutions Operating Company as agreed mutually by Purchaser and M/s L-1 Identity Solutions Operating Company or through a third party acceptable to both parties may pay M/s L-1 Identity Solutions Operating Company for those goods

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that have been satisfactorily installed and commissioned and for that part of the Services which have been authorized by the Purchaser and satisfactorily performed by M/s L-1 Identity Solutions Operating Company up to the date of termination. Without prejudice any other rights, the Purchaser may retain such amounts from the payment due and payable by the Purchaser to M/s L-1 Identity Solutions Operating Company as may be required to offset any losses caused to the Purchaser as a result of the Termination or due to any act/omissions of M/s L-1 Identity Solutions Operating Company. In case of any loss or damage due to default on the part of M/s L-1 Identity Solutions Operating Company in performing any of its obligations with regard to executing the Scope of Work under this Contract, M/s L-1 Identity Solutions Operating Company shall compensate the Purchaser for any such loss, damages or other costs, incurred by the Purchaser. Additionally, the team of M/s L-1 Identity Solutions Operating Company and/or all third parties appointed by M/s L-1 Identity Solutions Operating Company shall continue to perform all their obligations and responsibilities as stipulated under this Contract, and as may be proper and necessary to execute the Scope of Work under the Contract in terms of Bid of M/s L-1 Identity Solutions Operating Company, the Bid and this Contract, in an identical manner as were being performed before the collapse of M/s L-1 Identity Solutions Operating Company as described above in order to execute an effective transition and to maintain business continuity. All third parties shall continue to perform all/any functions as stipulated by the UIDAI and as may be proper and necessary to execute the scope of work under the Contract in terms of the bid of M/s L-1 Identity Solutions Operating Company, the Tender and this Contract.

24.3 Nothing herein shall restrict the right of the Purchaser to invoke the Bank Guarantee and other Guarantees furnished hereunder, enforce the Deed of Indemnity and pursue such other rights and/or remedies that may be available to the Purchaser under law.

24.4 The termination hereof shall not affect any accrued right or liability of either Party nor affect the operation of the provisions of this Contract that are expressly or by implication intended to come into or continue in force on or after such termination.

24.5 In the event of termination of this Contract due to any cause whatsoever, whether consequent to the stipulated Terms of the Contract or otherwise or, if this Contract is terminated prior to the completion of Services, the Biometric Service Provider shall transfer the ownership of the equipment and licenses thereon to operate in the existing infrastructure provided under this contract to Purchaser.

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25. Dispute Resolution

25.1 If during the subsistence of this Contract or thereafter, any dispute between the Parties hereto arising out of or in connection with the validity, interpretation, implementation, material breach or any alleged material breach of any provision of this Contract or regarding any question, including as to whether the termination of this Contract by one Party hereto has been legitimate, the Parties hereto shall endeavor to settle such dispute amicably and/or by Conciliation to be governed by the Arbitration and Conciliation Act, 1996 or as may be agreed to between the Parties. The attempt to bring about an amicable settlement is considered to have failed as soon as one of the Parties hereto, after reasonable attempts; which attempt shall continue for not less than thirty (30) days, gives thirty (30) days notice to refer the dispute to arbitration to the other Party in writing.

25.2 The Arbitration proceedings shall be governed by the Indian Arbitration and Conciliation Act, 1996.

25.3 The Arbitration proceedings shall be held in Delhi, India.

25.4 The Arbitration proceeding shall be governed by the substantive laws of India.

25.5 The proceedings of Arbitration shall be in English language.

25.6 Except as otherwise provided elsewhere in the contract if any dispute, difference, question or disagreement arises between the parties hereto or their respective representatives or assignees, at any time in connection with construction, meaning, operation, effect, interpretation or out of the contract or breach thereof the same shall be decided by an Arbitral Tribunal consisting of three Arbitrators. Each party shall appoint one Arbitrator and the Arbitrators so appointed shall appoint the third Arbitrator who will act as Presiding Arbitrator.

25.7 In case, a party fails to appoint an arbitrator within 30 days from the receipt of the request to do so by the other party or the two Arbitrators so appointed fail to agree on the appointment of third Arbitrator within 30 days from the date of their appointment upon request of a party, the Chief Justice of India or any person or institution designated by him (in case of International commercial Arbitration) shall appoint the Arbitrators/Presiding Arbitrator. In case of domestic contracts, the Chief Justice of the High Court or any person or institution designated by him within whose jurisdiction the subject purchase order/contract has been placed / made, shall appoint the arbitrator/Presiding Arbitrator upon request of one of the parties.

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25.8 If any of the Arbitrators so appointed dies, resigns, incapacitated or withdraws for any reason from the proceedings, it shall be lawful for the concerned party/ arbitrator to appoint another person in his place in the same manner as aforesaid. Such person shall proceed with the reference from the stage where his predecessor had left if both parties consent for the same, otherwise, he shall proceed de novo.

25.9 It is a Scope of the contract that the party invoking arbitration shall specify all disputes to be referred to arbitration at the time of invocation of arbitration and not thereafter.

25.10 It is also a Scope of the contract that neither party to the contract shall be entitled for any interest on the amount of the award.

25.11 The Arbitral Tribunal shall give reasoned award and the same shall be final, conclusive and binding on the parties.

25.12 The fees of the arbitrator shall be borne by the parties nominating them and the fee of the Presiding Arbitrator, costs and other expenses incidental to the arbitration proceedings shall be borne equally by the parties.

25.13 Subject to as aforesaid the provisions of the Arbitration and Conciliation Act, 1996 and any statutory modifications or re-enactment in lieu thereof shall apply to the arbitration proceedings under this clause.

25.14 Continuance of the Contract:

25.15 Notwithstanding the fact that settlement of dispute(s) (if any) under arbitration may be pending, the parties hereto shall continue to be governed by and perform the work in accordance with the provisions under this Contract.

26. Time is of the essence

26.1 Time shall be of the essence in respect of any date or period specified in this Contract or any notice, demand or other communication served under or pursuant to any provision of this Contract and in particular in respect of the completion of the activities by M/s L-1 Identity Solutions Operating Company by the specified completion date.

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27. Conflict of interest

27.1 M/s L-1 Identity Solutions Operating Company shall disclose to the Purchaser in writing, all actual and potential conflicts of interest that exist, arise or may arise (either for M/s L-1 Identity Solutions Operating Company or the team of M/s L-1 Identity Solutions Operating Company) in the course of performing the Services as soon as practical after it becomes aware of that conflict.

28. Publicity

28.1 M/s L-1 Identity Solutions Operating Company / Team of M/s L-1 Identity Solutions Operating Company shall not make or permit to be made a public announcement or media release about any aspect of this Contract unless the Purchaser first gives M/s L-1 Identity Solutions Operating Company its written consent.

29. Force Majeure

29.1 Force Majeure shall not include any events caused due to acts/omissions of such Party or result from a breach/contravention of any of the terms of the Contract, Bid and/or the Bid. It shall also not include any default on the part of a Party due to its negligence or failure to implement the stipulated/proposed precautions, as were required to be taken under the Contract.

29.2 For Purposes of this Clause, "Force Majeure" means an event beyond the control of M/s L-1 Identity Solutions Operating Company and not involving M/s L-1 Identity Solutions Operating Company and not involving M/s L-1 Identity Solutions Operating Company 's fault or negligence and not foreseeable. Such events may include, but are not restricted to, acts of the Purchaser either in its sovereign or contractual capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes. If a force Majeure situation rises, M/s L-1 Identity Solutions Operating Company shall promptly notify the Purchaser in writing of such conditions and the cause thereof. Unless otherwise directed by the Purchaser in writing, M/s L-1 Identity Solutions Operating Company shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

29.3 The failure or occurrence of a delay in performance of any of the obligations of either party shall constitute a Force Majeure event only where such failure or delay could not have reasonably been foreseen, or where despite the presence of adequate and

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stipulated safeguards the failure to perform obligations has occurred. In such an event, the affected party shall inform the other party in writing within five days of the occurrence of such event. The Purchaser will make the payments due for Services rendered till the occurrence of Force Majeure. However, any failure or lapse on the part of M/s L-1 Identity Solutions Operating Company / Team of M/s L-1 Identity Solutions Operating Company in performing any obligation as is necessary and proper, to negate the damage due to projected force majeure events or to mitigate the damage that may be caused due to the abovementioned events or the failure to provide adequate disaster management/recovery or any failure in setting up a contingency mechanism would not constitute force majeure, as set out above.

29.4 In case of a Force Majeure, all Parties will endeavor to agree on an alternate mode of performance in order to ensure the continuity of service and implementation of the obligations of a party under the Contract and to minimize any adverse consequences of Force Majeure.

30. General

30.1 Relationship between the Parties

a. Nothing in this Contract constitutes any fiduciary relationship between the Purchaser and M/s L-1 Identity Solutions Operating Company/Team of M/s L-1 Identity Solutions Operating Company or any relationship of employer employee, principal and agent, or partnership, between the Purchaser and M/s L-1 Identity Solutions Operating Company.

b. No Party has any authority to bind the other Party in any manner whatsoever except as agreed under the terms of this Contract.

c. The Purchaser has no obligations to the team of M/s L-1 Identity Solutions Operating Company except as agreed under the terms of this Contract.

30.2 Survival

The provisions of the clauses of this Contract in relation to documents, data, processes, property, Intellectual Property Rights, indemnity, publicity and confidentiality and ownership survive the expiry or termination of this Contract and in relation to confidentiality, the obligations continue to apply unless the Purchaser notifies M/s L-1 Identity Solutions Operating Company of its release from those obligations.

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30.3 Entire Contract

The terms and conditions laid down in the Bid and all annexures, addendum thereto as also the Bid and any attachments/annexes thereto shall be read in consonance with and form an integral part of this Contract. This Contract supersedes any prior Contract, understanding or representation of the Parties on the subject matter.

30.4 Governing Law

This Contract shall be governed in accordance with the laws of India.

30.5 Jurisdiction of Courts

The courts of India at Delhi have exclusive jurisdiction to determine any proceeding in relation to this Contract.

30.6 Compliance with Laws

M/s L-1 Identity Solutions Operating Company / Team of M/s L-1 Identity Solutions Operating Company shall comply with the laws in force in India in the course of performing this Contract.

30.7 Notices

All notices, requests or consents provided for or permitted to be given under this Contract shall be in writing and shall be deemed effectively given when personally delivered or mailed by pre-paid certified/registered mail, return receipt requested, addressed as follows and shall be deemed received two days after mailing or on the date of delivery if personally delivered:

To Purchaser at:

The Deputy Director General,
Unique Identification Authority of India,
Tower 2, 3rd Floor, Jeevan Bharati Building
Connaught Circus, New Delhi - 110001
[Phone:] +91 11 23753706

To M/s L-1 Identity Solutions Operating Company at:

L-1 Identity Solutions Operating Company
c/o Biometrics Division
5705 West Old Shakopee Road, Suite 100
Bloomington, Minnesota 55437
Attn: President
[Phone:] (952) 932-0888
[Fax:] (952) 932-7181

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Any Party may change the address to which notices are to be directed to it by notice to the other parties in the manner specified above.

A notice served on a Representative is taken to be notice to that Representative's Party.

30.8 **Waiver**

a. Any waiver of any provision of this Contract is ineffective unless it is in writing and signed by the Party waiving its rights.

b. A waiver by either Party in respect of a breach of a provision of this Contract by the other Party is not a waiver in respect of any other breach of that or any other provision.

c. The failure of either Party to enforce at any time any of the provisions of this Contract shall not be interpreted as a waiver of such provision.

31. Application

31.1 These General Conditions shall apply to the extent that provisions in other parts of the Contract do not supersede them.

32. Performance Security

32.1 Within 15 days after the receipt of notification of award of the Contract / Purchase Order from the Purchaser, the successful bidder shall furnish Performance Security to the Purchaser, which shall be equal to 10% of the value of the Contract and shall be in the form of a Guarantee Bond from a Nationalised Bank in the Proforma given at Annexe 4.3.3 of Section IV of the Bid Document.

33. Modification

33.1 Any modification of this Contract shall be in writing and signed by an authorized representative of each Party.

34. Currency of Payment

34.1 Payment shall be made in Indian Rupees only.

35. Change Orders/Alteration/Variation

35.1 M/s L-1 Identity Solutions Operating Company agrees that the System requirements/quantities/licenses/specifications and Service requirements given in

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the Bid documents are minimum requirements and are in no way exhaustive and guaranteed by the Purchaser.

35.1.1 Any upward revision and/or additions consequent to errors, omissions, ambiguities, discrepancies in the quantities, specifications, drawings etc. of the Bid documents which M/s L-1 Identity Solutions Operating Company had not brought out to the Purchaser's notice till the time of award of work and not accounted for in his Bid **shall not constitute a change order** and such upward revisions and/or addition shall be carried out by M/s L-1 Identity Solutions Operating Company without any time and cost effect to Purchaser.

35.1.2 It shall be the responsibility of M/s L-1 Identity Solutions Operating Company to meet all performance and other requirements of the Purchaser as stipulated in the Bid document / Contract. Any upward revisions / additions of quantities, specifications, technical manpower, service requirements to those specified by M/s L-1 Identity Solutions Operating Company in his Bid documents, that may be required to be made during installation / commissioning of the System or at any time during the currency of the contract in order to meet the conceptual design, objective and performance levels or other requirements as defined in the Bid documents shall not constitute a change order and shall be carried out by M/s L-1 Identity Solutions Operating Company without any change order and without any time and cost effect to the Purchaser whatsoever.

35.2 The Purchaser may at any time, by a written change order given to M/s L-1 Identity Solutions Operating Company, make changes within the general scope of the Contract. The Purchaser will have the option to increase or decrease (decrease only if communicated to M/s L-1 Identity Solutions Operating Company prior to availing of services / dispatch of goods / equipments) the Quantities, Licenses and/or Specifications of the goods/equipment to be supplied and installed by M/s L-1 Identity Solutions Operating Company or service requirements, as mentioned in the Contract, at any time during the contract period.

35.3 The written advice to any change shall be issued by the Purchaser to M/s L-1 Identity Solutions Operating Company upto 4 (four) weeks prior to the due date of provisioning/supply of such goods/equipments or commencement of services.

35.4 In case of increase in Quantities/ Licenses / Specifications or Service requirements or in case of additional requirement, M/s L-1 Identity Solutions Operating Company agrees to carry out / provision for such additional requirement at the rate and terms and conditions as provided in the Contract except for the appropriate extension of

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time to be allowed for delivery/installation of such extra goods/equipment or for commencement of such services. In case of decrease in Quantities or Specifications of goods/equipment or Service requirements, M/s L-1 Identity Solutions Operating Company shall give a reduction in price at the rate given in the Contract corresponding to the said decrease.

35.5 In case applicable rates for the increase/decrease in question are not available in the Contract then the rates as may be mutually agreed shall apply. M/s L-1 Identity Solutions Operating Company shall not be entitled to any claim by way of change of price, damages, losses, etc. M/s L-1 Identity Solutions Operating Company shall be compensated at actual for any cancellation charges provided the claim is duly supported by documentary evidence of having incurred cancellation charges, which results from Purchaser's action in reducing/canceling Term of reference.

35.6 **Conditions for Change Order**

35.6.1 The change order will be initiated only in case (i) the Purchaser directs in writing M/s L-1 Identity Solutions Operating Company to incorporate changes to the goods or design requirements already covered in the Contract. (ii) the Purchaser directs in writing to M/s L-1 Identity Solutions Operating Company to include any addition to the Scope of Work or services covered under this Contract or delete any part thereof, (iii) M/s L-1 Identity Solutions Operating Company requests to delete any part of the work which will not adversely affect the operational capabilities and functioning of the system and if the deletions proposed are agreed to by the Purchaser and for which cost and time benefits shall be passed on to the Purchaser,

35.6.2 Any change order comprising an alteration which involves change in the cost of the goods and/or services (which sort of alteration is hereinafter called a "Variation") shall be the Subject of an amendment to the Contract by way of an increase or decrease in the Contract Value and adjustment of the implementation schedule if any.

35.6.3 If the Contract provides applicable rates for the valuation of the variation in question the Contract Value shall subject to **Clause 35.6.4** be increased or decreased in accordance with those rates.

35.6.4 If parties agree that the Contract does not contain applicable rates or that the said rates are inappropriate or the said rates are not precisely applicable to the variation in question, then the parties shall negotiate a revision of the Contract

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Value which shall represent the change in cost of the goods and/or works caused by the Variations. Any change order shall be duly approved by the Purchaser in writing.

35.6.5 If there is a difference of opinion between M/s L-1 Identity Solutions Operating Company and Purchaser's Representative on whether a particular item, work or part of the work constitutes a change order or not, the matter shall be handled in accordance with the procedures set forth in **Clause 35.7.11.**

35.7 **Procedures for Change Order**

35.7.1 Upon receiving any revised requirement/advice, in writing, from the Purchaser, M/s L-1 Identity Solutions Operating Company would verbally discuss the matter with Purchaser's Representative.

35.7.2 In case such requirement arises from the side of M/s L-1 Identity Solutions Operating Company, he would also verbally discuss the matter with Purchaser's Representative giving reasons thereof.

35.7.3 In either of the two cases as explained in **Clause 35.7.1** and **Clause 35.7.2** above, the representatives of both the parties will discuss on the revised requirement for better understanding and to mutually decide whether such requirement constitutes a change order or not.

35.7.4 If it is mutually agreed that such Requirement constitutes a "Change Order" then a joint memorandum will be prepared and signed by M/s L-1 Identity Solutions Operating Company and Purchaser to confirm a "Change Order" and basic ideas of necessary agreed arrangement.

35.7.5 M/s L-1 Identity Solutions Operating Company will study the revised requirement in accordance with the joint memorandum under **Clause 35.7.4** and assess subsequent schedule and cost effect, if any.

35.7.6 Upon completion of the study referred to above under **Clause 35.7.5**, the results of this study along with all relevant details including the estimated time and cost effect thereof with supporting documents would be submitted to the Purchaser to enable the Purchaser to give a final decision whether M/s L-1 Identity Solutions Operating Company should proceed with the change order or not in the best interest of the works.

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35.7.7 The estimated cost and time impact indicated by M/s L-1 Identity Solutions Operating Company shall be considered as a ceiling limit and shall be provisionally considered for taking a decision to implement change order.

35.7.8 The time impact applicable to the Contract shall be mutually agreed, subsequently, on the basis of the detailed calculations supported with all relevant back up documents.

35.7.9 In case M/s L-1 Identity Solutions Operating Company fails to submit all necessary substantiation/calculations and back up documents, the decision of the Purchaser regarding time and cost impact shall be final and binding on M/s L-1 Identity Solutions Operating Company.

35.7.10 If Purchaser accepts the implementation of the change order under **Clause 35.7.6** in writing, which would be considered as change order, then M/s L-1 Identity Solutions Operating Company shall commence to proceed with the enforcement of the change order pending final agreement between the parties with regard to adjustment of the Contract Value and the Schedule.

35.7.11 In case, mutual agreement under **Clause 35.7.4** above, i.e. whether new requirement constitutes the change order or not, is not reached, then M/s L-1 Identity Solutions Operating Company in the interest of the works, shall take up the enforcement of the change order, if advised in writing to do so by Purchaser's Representative pending settlement between the two parties to the effect whether such requirement constitutes a change order or not as per the terms and conditions of Contract documents. The time and cost effects in such a case shall be mutually verified and recorded. Should it establish that the said work constitutes a change order, the same shall be compensated taking into account the records kept in accordance with the Contract.

35.7.12 M/s L-1 Identity Solutions Operating Company shall submit necessary back up documents for the change order showing the break-up of the various elements constituting the change order for the Purchaser's review. If no agreement is reached between the Purchaser and M/s L-1 Identity Solutions Operating Company within 60 days after Purchaser's instruction in writing to carry out the change concerning the increase or decrease in the Contract Value and all other matters described above, either party may refer the dispute to arbitration.

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35.8 **Conditions for revised work / change order**

35.8.1 The provisions of the Contract shall apply to revised work / change order as if the revised work / Change order has been included in the original Scope of Work. However, the Contract Value shall increase / decrease and the schedule shall be adjusted on account of the revised work / Change orders as may be mutually agreed in terms of provisions set forth in **Clause 35**. The obligations of M/s L-1 Identity Solutions Operating Company with respect to such revised work / change order shall remain in accordance with the Contract.

36. Governing Language

36.1 The Agreement shall be written in English and/or Hindi language. Subject to **Clause 6 of Section II of the Bid Document,** such language versions of the Agreement shall govern its interpretation. All correspondence and other documents pertaining to the Contract that are exchanged by parties shall be written in either English or Hindi language. In the event of a conflict between the two versions, English version shall prevail.

37. "No Claim" Certificate

37.1 M/s L-1 Identity Solutions Operating Company shall not be entitled to make any claim, whatsoever against the Purchaser, under or by virtue of or arising out of, this contract, nor shall the Purchaser entertain or consider any such claim, if made by M/s L-1 Identity Solutions Operating Company after he shall have signed a "No claim" certificate in favour of the Purchaser in such forms as shall be required by the Purchaser after the works are finally accepted.

38. Warranty

38.1 A comprehensive warranty applicable on all goods supplied under this contract shall be provided by the respective OEM for 5 (Five) calendar years from the date of acceptance of the entire system by the Purchaser.

38.2 Technical Support for Software/Algorithms shall be provided by the respective OEM for 5 (Five) calendar years from the date of acceptance of the entire system by the Purchaser. The Technical Support should include all upgrades, updates and patches to the respective Software for the above stated period.

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38.3 M/s L-1 Identity Solutions Operating Company warrants that the Goods supplied under the Contract are new, non-refurbished, unused and recently manufactured; shall not be nearing End of sale / End of support; and shall be supported by M/s L-1 Identity Solutions Operating Company and respective OEM along with service and spares support to ensure its efficient and effective operation for the entire duration of the contract.

38.4 M/s L-1 Identity Solutions Operating Company warrants that the goods supplied under this contract shall be of the highest grade and quality and consisted with the established and generally accepted standards for materials of this type. The goods shall be in full conformity with the specifications and shall operate properly and safely. All recent design improvements in goods, unless provided otherwise in the Contract, shall also be made available.

38.5 M/s L-1 Identity Solutions Operating Company further warrants that the Goods supplied under this Contract shall be free from all encumbrances and defects/faults arising from design, material, manufacture or workmanship (except insofar as the design or material is required by the Purchaser's Specifications) or from any act or omission of M/s L-1 Identity Solutions Operating Company, that may develop under normal use of the supplied Goods in the conditions prevailing at the respective Datacenter Sites and UIDAI Locations.

38.6 The Purchaser shall promptly notify M/s L-1 Identity Solutions Operating Company in writing of any claims arising under this warranty.

38.7 Upon receipt of such notice, M/s L-1 Identity Solutions Operating Company shall, with all reasonable speed, repair or replace the defective Goods or parts thereof, without prejudice to any other rights which the Purchaser may have against M/s L-1 Identity Solutions Operating Company under the Contract.

38.8 If M/s L-1 Identity Solutions Operating Company, having been notified, fails to remedy the defect(s) within a reasonable period, the Purchaser may proceed to take such remedial action as may be necessary, at the risk of M/s L-1 Identity Solutions Operating Company and expense and without prejudice to any other rights which the Purchaser may have against M/s L-1 Identity Solutions Operating Company under the Contract.

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39. Project In-charge

39.1 M/s L-1 Identity Solutions Operating Company shall ensure that at all times during the currency of the Contract a Project In-charge acceptable to the Purchaser shall take charge of the Performance of the Contract. Key Personnel required for execution of this contract have been provided under **clause 12 of Annexure E – Scope of Work.**

39.2 It is mandatory that the designated Project In-charge should not change till the acceptance of the system.

40. Completion of Contract

40.1 Unless terminated earlier, the Contract shall terminate on the completion of term as specified in the Contract and only after the obligations mentioned in Clause 24 are fulfilled to the satisfaction of the Purchaser.

41. Passing of Property

41.1 Ownership of goods that are part of this contract shall not pass to the Purchaser unless and until the system is accepted in accordance with the conditions of the contract and to the entire satisfaction of the Purchaser

41.2 M/s L-1 Identity Solutions Operating Company will be allowed to retain a lien on the goods supplied by him, for the unpaid amount of the cost of goods

42. No Assignment

42.1 M/s L-1 Identity Solutions Operating Company shall not transfer any interest, right, benefit or obligation under this Contract without the prior written consent of the Purchaser.

42.2 The purchaser reserves the right to assign this contract to a representative of UIDAI during the currency of the contract or extend and transfer this contract to the representative after the expiry of the current contract period. In the event of an assignment, obligations of M/s L-1 Identity Solutions Operating Company towards the purchaser under the contract will have to be fulfilled by the bidder and be accountable to the new assignee. In the event of transfer of contract to a representative at the end of the currency of this contract period, M/s L-1 Identity

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Solutions Operating Company undertake to continue to provide services at an offer which is mutually agreed upon by the purchaser (UIDAI or its representative) and the bidder.

43. Penalty

43.1 Activities required to be performed by M/s L-1 Identity Solutions Operating Company in order to execute the Scope of work of this contract and ongoing performance and maintenance services along with the service levels shall be in line with the requirements of Purchaser and in accordance with the timelines, performance/service levels and targets as stipulated in the Contract and SLA, failing which M/s L-1 Identity Solutions Operating Company would be liable for a Penalty as defined under Annexure C (Service Level Agreement) to General Conditions of Contract.

44. Insurance

44.1 The Goods supplied under this Contract shall be fully insured by M/s L-1 Identity Solutions Operating Company, against any loss or damage, till the Acceptance of the System, M/s L-1 Identity Solutions Operating Company shall submit to the Purchaser, documentary evidence issued by the insurance company, indicating that such insurance has been taken.

44.2 M/s L-1 Identity Solutions Operating Company shall bear all the statutory levies like customs, insurance, freight, etc. applicable on the goods during their shipment from respective manufacturing/shipment site of the OEM to the port of landing.

44.3 All charges like transportation charges, octroi, etc. that may be applicable till the goods are delivered at the respective site of installation shall also be borne by the bidder.

44.4 M/s L-1 Identity Solutions Operating Company during the term of this contract shall take out and maintain, at his own cost but on terms and conditions approved by UIDAI, insurance with financially sound and reputable insurers against the risks, and for the coverage, as specified below:

a. Insurance against loss of or damage to:-

i. equipment or assets procured or developed in whole or in part for fulfillment of obligations under this Contract

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ii. assets of M/s L-1 Identity Solutions Operating Company and property used in the performance of the Services, and

iii. any documents prepared by M/s L-1 Identity Solutions Operating Company in the performance of the Services.

i. shall pay all premia in relation thereto and shall ensure that nothing is done to make such insurance policies void or voidable

ii. at the Purchaser's request, shall provide evidence to the Purchaser showing that such insurance has been taken out and maintained and that the current premiums

44.5 therefore have been paid Employer's liability and workers' compensation insurance in respect of the Personnel of M/s L-1 Identity Solutions Operating Company/ Team of M/s L-1 Identity Solutions Operating Company, in accordance with the relevant provisions of the Applicable Law, as well as, with respect to such Personnel, any such life, health, accident, travel or other insurance as may be appropriate; and

45. **Limitation of Liability of M/s L-1 Identity Solutions Operating Company towards the Purchaser**

45.1 Except in case of gross negligence or willful misconduct on the part of M/s L-1 Identity Solutions Operating Company / Team of M/s L-1 Identity Solutions Operating Company or on the part of any person or company acting on behalf of M/s L-1 Identity Solutions Operating Company in executing the work or in carrying out the Services, M/s L-1 Identity Solutions Operating Company, with respect to damage caused by M/s L-1 Identity Solutions Operating Company to property and/or assets of the Purchaser or of any of Purchaser's vendors, shall not be liable to Purchaser.

(i) for any indirect or consequential loss or damage; and

(ii) for any direct loss or damage that exceeds (A) twice the Contract Value, or (B) the proceeds M/s L-1 Identity Solutions Operating Company may be entitled to receive from any insurance maintained by M/s L-1 Identity Solutions Operating Company to cover such a liability, whichever of (A) or (B) is higher.

45.2 This limitation of liability shall not affect M/s L-1 Identity Solutions Operating Company liability, if any, for damage to Third Parties caused by M/s L-1 Identity Solutions Operating Company / Team of M/s L-1 Identity Solutions Operating Company or any person or firm/company acting on behalf of M/s L-1 Identity Solutions Operating Company in executing the work or in carrying out the Services.

B.B. Nanawati, DGS

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Solicitor & Notary, Surat
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46. Payment Schedule

46.1 The contract value shall comprise of two components, viz payment as per actuals on the de-duplications undertaken by M/s L-1 Identity Solutions Operating Company based on unit price per allotted enrolment transaction finalized and payment of fixed amount of INR 5 Crores (Five Crore rupees) for the supply, installation commission of hardware for the capacity to cater to the first 1 Crore enrolment transactions.

46.2 Payments will be released to M/s L-1 Identity Solutions Operating Company only on satisfactory acceptance of the solution and deliverables:

46.3 All Payments shall be subject to provisions of Clauses 48.

46.4 Payment schedule

46.5 Prices shall remain firm and shall not be subject to any upward revision on any account whatsoever throughout the period of contract. Purchaser however reserves the right to review and negotiate the charges payable for Maintenance and support services of the system at the beginning of the each year or at any time at the request of Purchaser whichever is earlier to incorporate downward revisions as applicable and necessary.

46.6 Most Preferred Customer

46.6.1 M/s L-1 Identity Solutions Operating Company shall provide "Most Preferred Customer" status to the Purchaser. Accordingly, the prices payable for goods and services that are part of this contract shall in no event exceed the lowest price at which M/s L-1 Identity Solutions Operating Company has offered similar goods or services of comparable volumes to any other customer in the Republic of India at the time of placement of order by Purchaser.

46.6.2 After acceptance of the system, any offer made by M/s L-1 Identity Solutions Operating Company regarding further procurement of goods or services to the Purchaser shall be at competitive prices and not higher than as offered to any other customer in the Republic of India, for comparable volumes, at that point in time.

46.6.3 During the currency of the Contract, if the Purchaser requests services which require provisioning of additional personnel or resources by M/s L-1 Identity Solutions Operating Company, M/s L-1 Identity Solutions Operating Company should give highest priority to the Purchaser for provisioning of such personnel

B.B. Nanawati, IRS

L-1 Identity Solutions Operating Company Private Limited

or resources, which M/s L-1 Identity Solutions Operating Company has not committed to any other Account.

46.6.4 Purchaser reserves the right to seek any information from M/s L-1 Identity Solutions Operating Company in this context at any time during the currency of contract M/s L-1 Identity Solutions Operating Company shall provide "Most Preferred Customer" status to the Purchaser. Accordingly, the prices payable for goods and services that are part of this contract shall in no event exceed the lowest price at which M/s L-1 Identity Solutions Operating Company offers similar goods or services to any other customer during the currency of the contract.

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Payment Schedule			
S.No	Payment Items	Payment Values	Time of Disbursement
1	Hardware	50 % of INR 5 Crores	On delivery and installation of hardware at Primary and BCP site as per the Bill of Quantity submitted by M/s L-1 Identity Solutions Operating Company
		25 % of INR 5 Crores	On the acceptance of the Solution by UIDAI as per Annexure E – Scope of Work
		25 % of INR 5 Crores	On completion of first 1 Crore allotted enrolment transactions
2	De-duplications	As per actual number of de-duplications based on unit price per allotted enrolment transaction	Quarterly as per actual number of de-duplications

B.D. Nanavati, Adv.

L-1 Identity Solutions Operating Company Private Limited

47. Severance

47.1 In the event any provision of this Contract is held to be invalid or unenforceable under the applicable law, the remaining provisions of this Contract shall remain in full force and effect.

48. Liquidated Damages

48.1 A maximum level of performance penalties is established and described below. The framework for performance penalties as a result of not meeting the Service Level Targets are detailed below:

a. A quarterly performance evaluation will be conducted using the three monthly reporting periods of that quarter.

b. Performance penalties shall be levied for not meeting each of the severity levels of performance as per the following table:

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Severity Level	Penalty as a percentage of quarterly revenues for the allocation cycle applicable
9	Event of default and termination as per Clause 23 and 24 of the General Conditions of the Contract in Annexure A respectively and the consequences as provided in clause 24 of the General Conditions of the Contract shall follow
8	8.0 %
7	4.0 %
6	2.0 %
5	1.0 %
4	0.5 %
3	0.4 %
2	0.3 %
1	0.2 %

c. Performance Penalty for not meeting a measurement parameter for two consecutive quarters shall result in twice the penalty percentage of that respective measurement parameter.

d. Maximum Penalty applicable for any quarter shall not exceed 40 % of the 'quarterly revenues' for the respective quarter

e. Two consecutive quarterly deductions of 40 % of the quarterly revenues on account of any reason will be deemed to be an event of default and termination as per **Clause 23 and 24** of the General Conditions of the Contract in Annexure E respectively and the consequences as provided in **Clause 24** of the General Conditions of the Contract shall follow.

49. Suspension of Work

49.1 M/s L-1 Identity Solutions Operating Company shall, if ordered in writing by the Purchaser's Representative, temporarily suspend the works or any part thereof for such a period and such a time as ordered. M/s L-1 Identity Solutions Operating Company shall not be entitled to claim compensation for any loss or damage sustained by him by reason of temporary suspension of the Works as aforesaid. The Purchaser may consider suitable compensation to M/s L-1 Identity Solutions Operating Company on case to case basis, to the extent of work completed, subject to fulfillment of other conditions of this contract. An extension of time for

B.P. Nanawati, DGM

L-1 Identity Solutions

completion, corresponding with the delay caused by any such suspension of the works as aforesaid shall be granted to M/s L-1 Identity Solutions Operating Company, if request for same is made and that the suspension was not consequent to any default or failure on the part of M/s L-1 Identity Solutions Operating Company. In case the suspension of works, is not consequent to any default or failure on the part of M/s L-1 Identity Solutions Operating Company, and lasts for a period of more than 2 months, M/s L-1 Identity Solutions Operating Company shall have the option to request the Purchaser to terminate the Contract with mutual consent.

49.2 In the event that the Purchaser suspends the progress of work for any reason not attributable to M/s L-1 Identity Solutions Operating Company for a period in excess of 30 days in aggregate, rendering M/s L-1 Identity Solutions Operating Company to extend his performance guarantee then Purchaser shall bear only the cost of extension of such bank guarantee for such extended period restricted to the normal bank rates as applicable in the banking procedures subject to M/s L-1 Identity Solutions Operating Company producing the requisite evidence from the bank concerned.

D.S. Nanawati, ODS

Private Limited ★ L-1

Annexure B
Special Conditions

B.B. Nanawati, DSC

Special Conditions

1. Definitions

I. "Acceptance of Bid" means the letter/fax or any memorandum communicating to the bidder, the acceptance of his bid, and includes an advance acceptance of his bid.

II. "Business Day" means any day that is not a Sunday or a public holiday (as per the official holidays observed by UIDAI).

III. "Confidential Information" means any information disclosed to or by any Party to this Contract and includes any information in relation to the Parties, a third party any other person any such information that may come to the knowledge of the Parties hereto / Biometric Solution Provider's Team by virtue of this Contract that:

a. is by its nature confidential or by the circumstances in which it is disclosed confidential; or

b. is designated by the disclosing Party as confidential or identified in terms connoting its confidentiality;

but does not include information which is or becomes public knowledge other than by a breach of this Contract;

IV. "The Purchaser" means the President of India acting through the Director General, Unique Identification Authority of India (UIDAI), Planning Commission, Government o India

V. "Purchase Officer" means the officer signing the acceptance of bid and includes any officer who has authority to execute the relevant contract on behalf of the Purchaser.

VI. "UIDAI", means the Director General, Unique Identification Authority of India (UIDAI) or any other representative authorized by the Director General, UIDAI and also including the officer of the UIDAI across India.

VII. "Document" means any embodiment of any text or image however recorded and includes any data, text, images, sound, voice, codes or and databases or microfilm or computer generated micro fiche.

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VIII. **"Purchaser's Representative/Project Coordinator"** means the person or the persons appointed by the Purchaser from time to time to act on its behalf for overall co-ordination, supervision and project management.

IX. **"Primary Site"** means the Central ID Data Repository ("CIDR") Data Center in Delhi that would house the Information and Communication Technology (ICT) equipment required for carrying out the centralized operations of CIDR.

X. **"BCP Site"** means the Business Continuity Site of the CIDR located at a Data Centre in Bangalore that would house ICT equipment similar to the Primary site and which would be capable of running business operations of the CIDR in case of an eventuality.

XI. **"Datacenter Sites"** means the Primary and BCP site of the CIDR including their respective Data Center space, Communications Room and Non-Data Centre space wherein the delivery, installation, integration, management and maintenance services as specified under the **Annexure E - Scope of Work** are to be carried out for the purpose of this Contract. Each individually referred to as Datacenter Site and collectively as Datacenter Sites.

XII. **"Prime Consortium Member"** means the Prime Member of the Consortium, in case of a consortium bid. For the purpose of this contract **Prime Consortium Member** means the **Biometric Solution Provider.**

XIII. The **"Biometric Solution Provider"** means the successful bidder whose bid has been accepted by the Purchaser and with whom the order for providing a **turnkey solution towards** Design, Supply and Implementation of Biometric Matching Services has been placed as per requirements and terms and conditions specified in this Bid/contract and shall be deemed to include the Biometric Solution Provider's successors, representatives (approved by the Purchaser), heirs, executors, administrators and permitted assigns, as the case may be, unless excluded by the terms of the contract.

XIV. **"Biometric Solution Provider's Team"** means the Successful Bidder alone or along with all of its consortium members, who have to provide goods & services to the Purchaser under the scope of this Bid / Contract. This definition shall also include any and/or all of the employees of the Prime Consortium Member, consortium members, authorized service providers/partners/agents and representatives or other personnel employed or engaged either directly or

B.B. Nanavati, Adv.

L-1 Identity Solutions Operating Company Private Limited

indirectly by the Biometric Solution Provider for the purposes of this Bid / Contract.

XV. **"Biometric Solution Provider's Representative/ Project Coordinator"** means the person or the persons appointed by the Biometric Solution Provider from time to time to act on its behalf for overall co-ordination, supervision and project management.

XVI. **"Parties"** means the Purchaser and, the Biometric Solution Provider, and **"Party"** means either of the Parties.

XVII. **"Contract"** means the Agreement entered into between the Purchaser and the Biometric Solution Provider including all attachments and Annexes thereto, the Bid and all Annexes thereto and the agreed terms as set out in the Bid, all documents incorporated by reference therein and amendments and modifications to the above from time to time.

XVIII. **"De-Duplication"** means assurance through biometric comparisons that no enrolled person has been assigned more than one Unique ID number.

XIX. **"Enrolment Transactions"** mean the transaction to perform de-duplication check in order to establish if there exists any duplicate(s) for the subject to be enrolled.

XX. **"Allotted Enrolment Transactions"** mean the transaction allocated to a Biometric Solution to perform de-duplication in order to check if there exist any duplicate(s) for the subject being enrolled.

XXI. **"Goods"** means all of the equipment, sub-systems, hardware, software, products accessories and/or other material / items which the Biometric Solution Provider is required to supply, install and maintain under the contract.

XXII. **"System"** means all of the goods under the scope of this contract together as an integrated solution.

XXIII. **"Commissioning of System"**: The system shall be deemed to have been commissioned, when all the activities as defined in **Clause 9.3** under **Annexure E - Scope of Work** have been successfully executed and completed.

XXIV. **"Acceptance of System"**: The system shall be deemed to have been accepted by the Purchaser, subsequent to its commissioning, when all the activities as defined in **Clause 10** under **Annexure E - Scope of Work** have been successfully executed and completed.

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XXV. "**Effective Date**" means the date on which this Contract is signed and executed by the parties hereto. If this Contract is executed in parts, then the date on which the last of such Contracts is executed shall be construed to be the Effective Date;

XXVI. "**Intellectual Property Rights**" means any patent, copyright, trademark, trade name, service marks, brands, propriety information, UIDAI Application Software whether arising before or after the execution of this Contract and the right to ownership and registration of these rights.

XXVII. "**Kick Off Meeting**" means a meeting convened by the Purchaser to discuss and finalize the work execution plan and procedures with the Biometric Solution Provider.

XXVIII. "**Service**" means services to be provided as per the **Annexure E - Scope of Work** as specified in this bid document and incidental services, such as design, supply and implementation or any other such obligations of the Biometric Solution Provider covered under the Contract. In addition to this, the definition would also include other related/ancillary services that may be required to execute the Scope of Work under this contract.

XXIX. "**Service Specification**" means and includes detailed description, statements to technical data, performance characteristics, and standards (Indian as well as International) as applicable and as specified in the Contract, as well as those specifications relating to Industry standards and codes applicable to the performance of the work, work performance quality and specifications affecting the work or any additional specification required to be produced by the Biometric Solution Provider to meet the design criteria/ and/ or contract requirements.

XXX. "**The Contract Value**" means the unit price per allotment enrollment transactions times maximum of 10 Crore allotted enrollment transactions during contract period notwithstanding the rules of dynamic allocation as per Annexure D – Work allocation & Service Levels.

XXXI. "**Notice**" means:

i. a notice; or
ii. a consent, approval or other communication required to be in writing under this Contract.

B.B. Nanawati, ADS

2. Escrow

2.1. "Upon UID's written request, and pursuant to a mutually-agreeable, industry-standard escrow agreement, from the time of commencement of the contract for a period up to 2 years after expiry of contract, Biometric Solution Provider shall place in escrow: a copy of the source code for the Software, consisting of a full source language statement of the program or programs comprising the Software, in a form suitable for reproduction and use by computer; complete program maintenance documentation, including all technical manuals, release notes; and all other material necessary to allow a reasonably skilled programmer or analyst to understand, maintain, modify and enhance the Software without Biometric Solution Provider's assistance or reference to any other materials. The escrow agreement shall, at a minimum, provide for release of the source code to UID in the event Biometric Solution Provider ceases to do business as an ongoing concern or in the event of breach of contract by the Biometric Solution Provider. Biometric Solution Provider shall be responsible for all fees of the escrow agent."

3. Privacy of data

3.1. In course of the Agreement, the Biometric Solution Provider may collect, use, transfer, store or otherwise process (collectively, "process") information that pertains to specific individuals and can be linked to them ("personal data"). Biometric Solution Provider warrants that it shall process all personal data in accordance with applicable law and regulation. Biometric Solution Provider further warrants that it shall process such personal information only for the purposes of this Agreement, and shall not use or disclose such information, otherwise pursuant to purposes of the Agreement.

4. Right for security clearance

4.1. UID may execute background checks on any or all employees of the Biometric Solution Provider who are assigned to work on the project. Such background checks will include drug screening and checks for criminal activity, credit history checks, and checks on qualifications, suitability and experience of Biometric Solution Provider's employees before and/or during their assignment to the project under this Agreement.

5. Opening of registered office in India

5.1. The Biometric Solution Provider should have an office in India in the form of a registered office.

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L-1 Identity Solutions Operating Company Private Limited

6. **Adherence to disclosure norms**

6.1. UID is entitled to audit any amount claimed by the Biometric Solution Provider in an invoice submitted to UID, and/or require the Biometric Solution Provider to disclose any document, material, data, and/or information in relation to the Agreement.

7. **Compliance to requirement of technical queries in relation to performance and system behavior**

7.1. Biometric Solution Provider will provide UID with support services (including but not limited to addressing any technical query raised by UID) as and when reasonably sought by the UID, in relation to use of the software, performance of services by Biometric Solution Provider, or any matter relating to them.

8. **Compliance to Indian IT Act 2008 and amendments thereof; UIDAI Act, if any passed by Government of India at a future date**

8.1. The Biometric Solution Provider undertakes that during the term of this Agreement, it shall:-

i. comply with all applicable laws and regulations as amended from time to time, in the performance of its obligations; and

ii. hold all valid and current licenses required to perform the services, in relation to this Agreement and any matter relating to them.

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Annexure C
Service Level Agreement

B.B. Nanawati, DDG
Unique Identification Authority of India,
Planning Commission Yojana Bhawan,
Parliament Street, New Delhi-110 001

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Service Level Agreement

1. Purpose of this Agreement

i. The purpose of this agreement is to define the levels of service to be provided by Biometric Suppliers to Purchaser for the duration of this contract or until this SLA has been amended.

ii. This SLA is intended to

a. Trigger a process that applies Purchaser and Biometric Suppliers' management attention to some aspect of performance only when that aspect drops below an agreed upon threshold, or target

b. Make explicit the expectations that the purchaser has for performance

c. Help Purchaser control the levels and performance of services

2. Definitions

i. For generic definitions, please refer to 'General Conditions of Contract'.

ii. Below are definitions specific to this SLA document.

a. **"Enrolment Transactions"** The transaction related to the successful de-duplication check to establish if there exist any duplicate(s) for one subject to be enrolled.

b. **"Allocation Cycle"** The period for which the allocation of transactions volumes to biometric suppliers remains fixed. The cycle duration shall be 3 months or till 1 Crore new enrolment transactions are made, whichever is earlier.

c. **"False Positive Identification"** A term applying to de-duplication transactions only. An incorrect decision of a biometric system that an applicant for a UID has previously been enrolled in the system, when in fact they have not.

d. **"False Positive Identification Rate (FPIR)"** A term applying to de-duplication transactions only. The ratio of number of false positive identification decisions to the total number of enrollment transactions by unenrolled individuals. This rate is expected to depend upon the size of the enrolled database and the database binning/partitioning used. Enrolled database size will be specified.

e. **"False Negative Identification"** A term applying to de-duplication transactions only. An incorrect decision of a biometric system that an applicant for a UID, making no attempt to avoid recognition, has not previously been enrolled in the system, when in fact they have. This failure to match might be caused by any algorithm in use by the system (segmentation, comparison, binning, quality, etc.).

f. **"False Negative Identification Rate (FNIR)"** A term applying to de-duplication transactions only. The ratio of number of false negative identification decisions to the total number of enrollment transactions by enrolled individuals. This rate is expected to depend upon the database binning/partitioning used to meet throughput requirements. Enrolled database

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size will be specified. As no failure-to-enrol decisions will be permitted for residents with any of the 12 biometrics available, failure-to-enrol rates are presumed to be zero and will not be considered in computing the false negative identification rate. Data from residents with none of the 12 biometrics will be exempted from the calculation of this rate.

g. **"False Acceptance"** A term applying to verification transactions only. The decision of a biometric system that submitted biometric samples match enrollment data from a different data subject.

h. **"False Match Rate"** A term applying to verification transactions only. The ratio of number of verification transactions conducted by data subjects resulting in a false match to the total number of transactions. The definition of "transaction" shall be given by the respondent, with the provision that the same definition is used in determining "False Match Rate".

i. **"False Rejection"** A term applying to verification transactions only. The decision of a biometric system that submitted biometric samples do not match enrollment data of the same data subject.

j. **"False Non Match Rate"** A term applying to verification transactions only. The ratio of number of verification transactions conducted by data subjects resulting in a false non match to the total number of transactions. The definition of "transaction" shall be given by the respondent, with the provision that the same definition is used in determining "False Non Match Rate".

3. Description of Services Provided

i. The exact scope and boundaries of services provided as part of this Contract Agreement are detailed in Annexure E and Annexure therein of this tender.

4. Service Level Agreements & Targets

i. This section is agreed to by the Purchaser and Biometric Suppliers as the key performance indicator for this engagement. This may be reviewed and revised according to the procedures detailed in Clause 6.5, SLA Change Control. The following section reflects the measurements to be used to track and report systems performance on a regular basis. The targets shown in the following tables are for the period of contact or its revision whichever is earlier. The procedures in Clause 6 will be used if there is a dispute between Purchaser and Biometric Suppliers on what the performance targets should be.

ii. **The Service Level Agreements shall not be applicable for services in phase(s) preceding and including implementation of Release 2 as stated in Annexure E and annexure therein of the bid document.**

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5. Categories of Service Levels

i. The Service Level Agreement (SLA) has been logically segregated in the following categories:
 a. Implementation phase related performance levels
 b. Solution related performance levels
 c. Operations related
 - Manpower Availability
 - Reporting

6. SLA Framework

i. This section describes the SLA framework for this contract comprising of the following:
 a. Responsibilities of parties
 b. Reporting procedures
 c. Issue management procedures
 d. Management escalation and contact map
 e. SLA change control
 f. Liquidated damages

6.1. Responsibilities of parties

6.1.1. Responsibilities of purchaser

i. Purchaser is responsible for:
 a. Reporting defects and problems to the Biometric Suppliers' representative as soon as possible
 b. Assisting Biometric Suppliers in managing the SLA
 c. Providing early warning of any organizational, functional or technical changes that might affect Biometric Supplier ability to deliver the services described in the SLA
 d. Assisting Biometric Suppliers in a timely manner in resolving production incidents

6.1.2. Responsibilities of Biometric Suppliers

i. Biometric Suppliers is responsible for delivering the services described in Annexure E, Scope of Work document to the performance targets detailed in this document.

ii. Additionally, Biometric Suppliers are responsible for:
 a. Reporting problems to Purchaser management as soon as possible
 b. Assisting Purchaser in managing the SLA
 c. Providing early warning of any organizational, functional or technical changes that might affect Biometric Suppliers' ability to deliver the services described in the SLA
 d. Assisting Purchaser in a timely manner in resolving production incidents

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iii. Immediate action will be taken to identify problems and follow up with appropriate action to fix them as quickly as possible.

6.2. Reporting procedures

i. The Biometric Suppliers' representative will prepare and distribute SLA performance reports in an agreed upon format by the 10th working day of subsequent month of the reporting period. The reports will include "actual versus target" SLA performance, a variance analysis and discussion of appropriate issues or significant events. Performance reports will be distributed to Purchaser management personnel as directed by Purchaser.

6.3. Issue management procedures

6.3.1. General

i. This process provides an appropriate management structure for the orderly consideration and resolution of business and operational issues in the event that quick consensus is not reached between Purchaser and Biometric Suppliers. It is expected that this pre-defined process will only be used on an exception basis if issues are not resolved at lower management levels.

6.3.2. Issue management process

i. Either Purchaser or Biometric Suppliers may raise an issue by documenting the business or technical problem, which presents a reasonably objective summary of both points of view and identifies specific points of disagreement with possible solutions.

ii. Purchaser and the Biometric Suppliers' representative will determine which committee or executive level should logically be involved in resolution. A chain of management escalation is defined in Clause 6.4 of this document.

iii. A meeting or conference call will be conducted to resolve the issue in a timely manner. The documented issues will be distributed to the participants at least 24 hours prior to the discussion if the issue is not an emergency requiring immediate attention.

iv. Management of Purchaser and Biometric Suppliers will develop a temporary, if needed, and the permanent solution for the problem at hand. The Biometric Suppliers will then communicate the resolution to all interested parties.

v. In the event a significant business issue is still unresolved, the arbitration procedures described in the Contract will be used.

6.4. Management escalation procedures and contact map

i. The purpose of this escalation process is to provide a quick and orderly method of notifying both parties that an issue is not being successfully resolved at the lowest possible

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Private Limited L-1 Identity Solutions Operating Company

management level. Implementing this procedure ensures that Purchaser and Biometric Suppliers' management are communicating at the appropriate levels.

ii. Escalation should take place on an exception basis and only if successful issue resolution cannot be achieved in a reasonable time frame.
 a. Either Purchaser or Biometric Suppliers can initiate the procedure
 b. The "moving party" should promptly notify the other party that management escalation will be initiated
 c. Management escalation will be defined as shown in the contact map below
 d. Escalation will be one level at a time and concurrently

6.4.1.Contact Map

Name	Designation	Party	Contact
Mr. Srikanth Nandamuni	Head, Technology, UIDAI	Purchaser	+91 9740065015 (srikanth@egovernments.org)
Mr. Ajay Nandan	ADG, UIDAI	Purchaser	+91 11 23752670 (ajay@uidai.gov.in)
Mr. B. B: Nanawati	DDG, UIDAI	Purchaser	+91 11 23753706 (bbnanawati@uidai.gov.in)
Mr. Kalidindi R N R	Director, Business Development, L1 ID	Biometric Suppliers	+91 9177772876 (rkalidindi@l1id.com)
Mr. Michael Van der Harst	Managing Director, L1 ID	Biometric Suppliers	+41 976154637 (mharst@l1id.com)
Mr. Richard Agostinelli	President, L1 ID	Biometric Suppliers	+1 6125320817 (ragostinelli@l1id.com)

6.5. SLA change control

6.5.1.General

i. It is acknowledged that this SLA may change as Purchaser's business needs evolve over the course of the contract period. As such, this document also defines the following management procedures:
 a. A process for negotiating changes to the SLA.
 b. An issue management process for documenting and resolving particularly difficult issues.
 c. Purchaser and Biometric Suppliers' management escalation process to be used in the event that an issue is not being resolved in a timely manner by the lowest possible level of management.

ii. Any changes to the levels of service provided during the term of this Agreement will be requested, documented and negotiated in good faith by purchaser and Biometric Solution Provider. Purchaser or any of the Biometric Solution Provider can request a change. Changes will be documented as an addendum to this attachment and, consequently, the Contract. If

B.B. Nanawati, IAS

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there is any confusion or conflict between the Contract and this document, the Tender and its addendums, the Contract will supersede.

6.5.2.SLA change process

i. The parties may amend this SLA by mutual agreement in accordance. Changes can be proposed by either party. **The Biometric Suppliers' representative will initiate an SLA review at least bi-annually**. Normally, the forum for negotiating SLA changes will be Purchaser's monthly meetings. Unresolved issues will be addressed using the issue management process described in **Clause 8** of this document.

ii. The Biometric Suppliers' representative will maintain and distribute current copies of the SLA document as directed by Purchaser. Additional copies of the current SLA will be available at all times to authorized parties.

6.5.3.SLA version control

i. All negotiated SLA changes will require changing the version control number. As appropriate, minor changes may be accumulated for periodic release (e.g. every quarter) or for release when a critical threshold of change has occurred.

6.6. Liquidate Damages

i. A maximum level of performance Liquidated damages is established and described below. The framework for performance Liquidated damages as a result of not meeting the Service Level Targets are detailed below:

a. A quarterly performance evaluation will be conducted using the three monthly reporting periods of that quarter.

b. Performance Liquidated damages shall be levied for not meeting each of the severity levels of performance as per the following table:

Severity Level	Liquidated damages as a percentage of quarterly revenues for the allocation cycle applicable
9	Event of default and termination as per Clause 23 and 24 of the General Conditions of the Contract in Annexure A respectively and the consequences as provided in clause 24 of the General Conditions of the Contract shall follow
8	8.0 %
7	4.0 %
6	2.0 %
5	1.0 %
4	0.5 %
3	0.4 %
2	0.3 %
1	0.2 %

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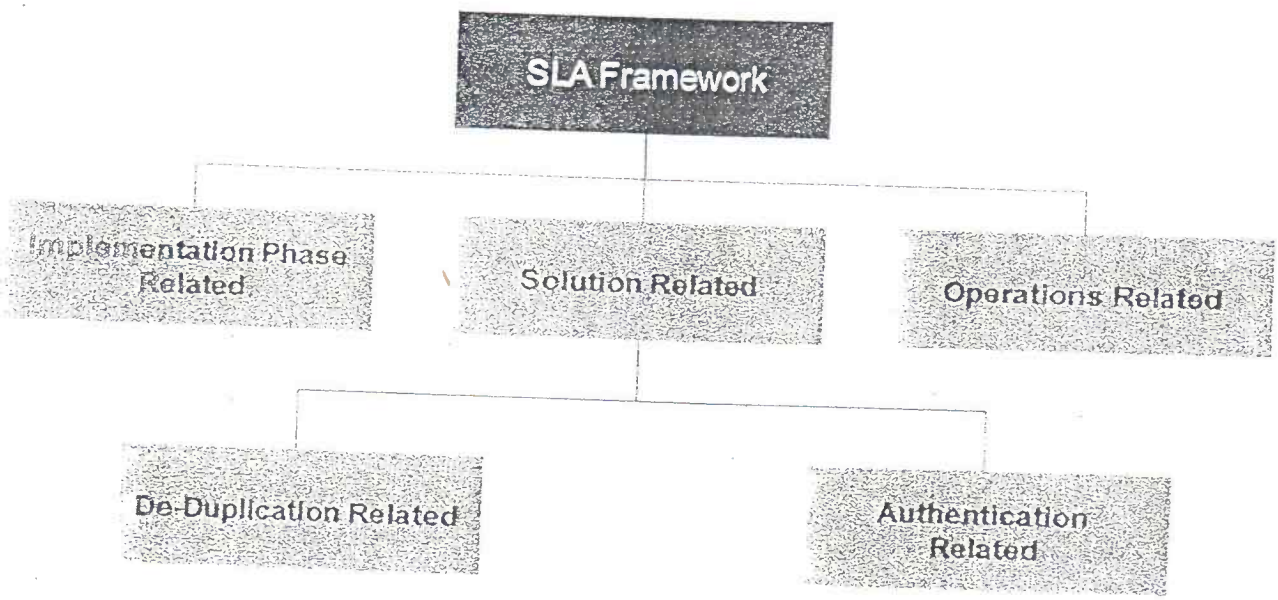
c. Performance Liquidated damages for not meeting a measurement parameter for two consecutive quarters shall result in twice the Liquidated damages percentage of that respective measurement parameter.

d. Maximum Liquidated damages applicable for any quarter shall not exceed 40 % of the 'quarterly revenues' for the respective quarter

e. Two consecutive quarterly deductions of 40 % of the quarterly revenues on account of any reason will be deemed to be an event of default and termination as per Clause 23 and 24 of the General Conditions of the Contract in Annexure A respectively and the consequences as provided in Clause 24 of the General Conditions of the Contract shall follow.

7. Measurements & Targets

i. The diagram below summarizes the framework of measurements and targets proposed as part of this Service Level Agreement.



7.1. Implementation Phase related Performance Levels

Measurement	Definition	Target	Liquidated damages
Stage - Project Kick-off			

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Measurement	Definition	Target	Liquidated damages
Team mobilization and commencement of work	The Biometric Suppliers are expected to mobilize the team for commencement of work for this project. The commencement of work would mean reporting of Biometric Suppliers' resources at the designated UIDAI location for project & implementation planning, design.	Within 7 calendar days from the date of release of Purchase Order.	None
Completion of go-live of system for Proof of Concept at both Primary and BCP sites.	Completion of Roll-out of system would mean, Go-live of the system, such that all application and biometric solution providers are able to use the infrastructure, to the satisfaction of the purchaser.	Within 14 calendar days from the date of release of Purchase Order.	Recover from the Biometric Solution Provider, as liquidated damages and not by way of Liquidated damages a sum equivalent to 1% of the Total fee payable for 1. Supply, installation and commissioning of Hardware 2. Quarterly payment on actual number of de-duplications undertaken till the date of measurement since last payment

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Measurement	Definition	Target	Liquidated damages
Installation and Commissioning of Hardware at Primary and BCP sites for testing and production	Delivery, installation, integration, testing of all components / equipments required for the system, to the satisfaction of the Purchaser as defined in Annexure E, Scope of Work	Within 63 calendar days from the date of release of Purchase Order	Recover from the Biometric Solution Provider, as liquidated damages and not by way of Liquidated damages a sum equivalent to 1% of the Total fee payable for 3. Supply, installation and commissioning of Hardware 4. Quarterly payment on actual number of de-duplications undertaken till the date of measurement since last payment
Installation and Commissioning of Solution in testing & production environments at Primary and BCP sites.	Delivery, installation, integration, testing of all components / equipments required for the system, to the satisfaction of the Purchaser as defined in Annexure E, Scope of Work	Within 70 calendar days from the date of release of Purchase Order	Recover from the Biometric Solution Provider, as liquidated damages and not by way of Liquidated damages a sum equivalent to 1% of the Total fee

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Measurement	Definition	Target	Liquidated damages
			payable for 1. Supply, installation and commission of Hardware 2. Quarterly payment on actual number of de-duplications undertaken till the date of measurement since last payment
Completion of acceptance and go-live Solution at both Primary and BCP sites.	Completion of acceptance testing and go-live of the solution to the satisfaction of the purchaser.	Within 84 calendar days from the date of release of Purchase Order	Recover from the Biometric Solution Provider, as liquidated damages and not by way of Liquidated damages a sum equivalent to 2% of the Total fee payable for 1. Supply, installation and commission of Hardware 2. Quarterly payment on

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Measurement	Definition	Target	Liquidated damages
			actual number of de-duplications undertaken till the date of measurement since last payment AND / OR Terminate the contract or a portion or part of the work thereof. The purchaser shall give 30 days notice to the Biometric Solution Provider of its intention to terminate the Contract and shall so terminate the Contract unless during the 30 days notice period, the Biometric Solution Provider initiates remedial action acceptable to

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Measurement	Definition	Target	Liquidated damages
			the Purchaser

7.2. Solution Related Performance Levels

i. For Solution details, refer to Annexure E – Scope of Work of the Contract and Section VII – Implementation Plan – Phasing & Transitioning.

ii. **SLA Principles for Solution related performance levels:**

Following are the SLA principles adopted for Solution related performance levels

a. The Performance targets for the Service Level Measurements during any period of assessment may not fixed for the entire contract period and may be revised for each period prior to the commencement of the period

b. The performance on SLAs by Biometric Suppliers, shall be used as the basis for proportioning the allocation of transaction volumes across Biometric Suppliers

c. The measurement on SLAs shall be based on assumption that all Biometric Suppliers shall be provided with identical hardware infrastructure, after acceptance as detailed in Annexure E.

- In case if the Biometric Solution Provider's requirement for server and storage during any of the 3 bands exceeds the maximum quantity provisioned by UIDAI, the Biometric Solution Provider shall compensate UIDAI on the cost for the additional hardware to be procured from its hardware supplier agency along with the associated costs on power, cooling and datacenter space and maintenance services. On the other hand, additional incentives for using less than prescribed hardware in each band above, for meeting the required number of allotted transactions, shall be provided to the Biometric Solution Provider. The plan for incentive shall be formulated by UIDAI keeping in view of reducing the overall cost.

d. In case if a Biometric Supplier does not meet minimum performance limit on accuracy for De-duplication activity, the Biometric Supplier shall be kept under probation for a period of 6 (six) months, during which, no fresh allocation of transaction volumes shall be made to the Biometric Supplier.

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i. Biometric Supplier under probation, can be considered for fresh allocation of transaction volumes based on successful testing on accuracy on prior allotted transactions as conducted by the purchaser at the end of probation period

ii. During probation, Biometric Supplier may choose to undertake Testing before the expiry of Probation Period. However, cost of such early testing shall be borne by the Biometric Supplier

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7.2.1. Biometric De-Duplication - Performance Levels effective from Acceptance of Solution

i. Note: There are no Biometric De-Duplication Performance Levels defined under SLA prior to acceptance of the Solution

1. Performance Level for allocation cycle with total enrolment transaction volumes between 1 Crore and 2 Crore

Measurement	Definition	Target (for reference database size between 1 and 2 Crore)	Consequence / Severity in case of Liquidated damages	Remedy for consequence
I. Accuracy				
1. False Positive Identification Rate (FPIR)	FPIR = (Number of false positive identification decisions in the day)/ (total number of enrollment transactions by unenrolled individuals in the day).	<= 0.1% measured per allocation cycle	None	Not Applicable
		> 0.1% measured per allocation cycle	• Biometric Solution kept under Probation • Only 50% of its allotted shared of enrolment transactions allotted in the next allocation cycle • If the FPIR of the Biometric Solution	Testing after Probation Period of 6 (six) months *Note: During Rehabilitation, Biometric Supplier may choose to undertake Testing before the expiry of Probation Period. However, the cost of such early testing shall be fully borne by the Biometric Supplier*

Measurement	Definition	Target (for reference database size between 1 and 2 Crore)	Consequence / Severity in case of Liquidated damages	Remedy for consequence
			continues to remain below stated target%, the Biometric Solution shall be kept under Rehabilitation	
2. False Negative Identification Rate (FNIR)	FNIR = (Number of false negative identification decisions in the day)/ (total number of enrollment transactions by unenrolled individuals in the day).	<=1% measured per allocation cycle	None	Not Applicable
		> 1% measured per allocation cycle	• Biometric Solution kept under Probation • Only 50% of its allotted shared of enrolment transactions allotted in the next allocation cycle • If the FNIR of the Biometric Solution continues to remain below state target%, the Biometric Solution shall be kept under Rehabilitation	Testing after Probation Period of 6 (six) months *Note: During Rehabilitation, Biometric Supplier may choose to undertake Testing before the expiry of Probation Period. However, the cost of such early testing shall be fully borne by the Biometric Supplier*
II. Speed				

Measurement	Definition	Target (for reference database size between 1 and 2 Crore)	Consequence / Severity in case of Liquidated damages	Remedy for consequence
1. Relative Response Time per De-duplication check	Response Time = (Number of De-duplication checks in 24 hours) / {[86400 seconds – idle time with no de-duplication transaction] * Total number of CPU cores used}	Least among all the Biometric Suppliers	Will impact allocation of transaction volumes in the next allocation cycle	Not Applicable
III. Availability				
1. Uptime	Uptime = {1 - [(Downtime) / (Total Time – Maintenance Time)]}	Minimum 99% up time measured on a monthly basis	None	Not Applicable
		>= 99 to < 98% up time measured on a monthly basis	Liquidated damages of severity level: 5	Not Applicable
		>= 98% to <97% up time measured on a monthly basis	Liquidated damages of severity level: 6	Not Applicable
		>= 97% to <96% up time measured on a monthly basis	Liquidated damages of severity level: 7	Not Applicable
		>= 96% to <95% up time measured on a monthly basis	Liquidated damages of severity level: 8	Not Applicable

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Measurement	Definition	Target (for reference database size between 1 and 2 Crore)	Consequence / Severity in case of Liquidated damages	Remedy for consequence
		<95% up time measured on a monthly basis	Liquidated damages of severity level: 9	Not Applicable
III. Resources Deployed				
1. Total amount of hardware	Relative number of server nodes of identical configuration used	Least among all the Biometric Suppliers	Will impact allocation of transaction volumes in the next allocation cycle	Not Applicable
		> Hardware cost provided by UIDAI	Biometric Supplier to compensate UIDAI for every additional hardware purchased	Not Applicable

2. Performance Level for allocation cycles with total enrolment transaction volumes above 2 Crore

 a. The Performance Criteria would be the same as those for cycle with total enrolment transaction volumes between 1 Crore and 2 Crore.

 b. However, the Purchase reserves the right to revise the targets for the performance criteria for subsequent cycle of 1 Crore enrolments (from 2 Crore enrolment transaction volumes onwards)

7.2.2. Biometric Verification - Performance Levels effective from Acceptance of Solution

i. Note: There are no Biometric Verification (1:1) Performance Levels defined under SLA prior to acceptance of the Solution

1. Performance Level for allocation cycle with total enrolment transaction volumes between 1 Crore and 2 Crore

Measurement	Definition	Target (for reference database size between 1 and 2 Crore)	Consequence	Remedy for consequence
I. Response Time				
Response Time per verification check	Response Time = (Number of Verification checks in 24 hours) / {[86400 seconds – idle time with no verification transaction] } using biometric based verification	Verification Level - Low: Less than or equal to 0.5 seconds measured on a monthly basis Verification Level - Medium: Less than or equal to 0.5 seconds measured on a monthly basis Verification Level - High: Less than or equal to 0.5 seconds measured on a monthly basis	None	Not Applicable
		Verification Level - Low: More than 0.5 seconds and less than or equal to 1 seconds measured on a monthly basis Verification Level - Medium: More than 0.5 seconds and less than or equal to 1 seconds measured on a monthly basis Verification Level - High: More than 0.5 seconds and less than or equal to 1 seconds measured on a monthly basis	Liquidated damages of severity level: 6	Not Applicable
		Verification Level - Low: More than 1	Liquidated damages of severity	Not Applicable

Measurement	Definition	Target (for reference database size between 1 and 2 Crore)	Consequence	Remedy for consequence
		seconds and less than or equal to 2 seconds measured on a monthly basis Verification Level - Medium: More than 1 seconds and less than or equal to 2 seconds measured on a monthly basis Verification Level - High: More than 1 seconds and less than or equal to 2 seconds measured on a monthly basis	level: 9	
II. Availability				
Uptime	Uptime = {1 - [(Downtime) / (Total Time – Maintenance Time)]}	Minimum 99% up time measured on a monthly basis	None	Not Applicable
		>= 99 to < 98% up time measured on a monthly basis	Liquidated damages of severity level: 5	Not Applicable
		>= 98% to <97% up time measured on a monthly basis	Liquidated damages of severity level: 6	Not Applicable
		>= 97% to <96% up time measured on a monthly basis	Liquidated damages of severity level: 7	Not Applicable
		>= 96% to <95% up time measured on a monthly basis	Liquidated damages of severity level: 8	Not Applicable
		<95% up time measured on a monthly basis	Liquidated damages of severity level: 9	Not Applicable
II. Accuracy				

Measurement	Definition	Target (for reference database size between 1 and 2 Crore)	Consequence	Remedy for consequence
1. False Match Rate (FMR)	FMR = (Number of verification transactions in the day resulting in a false match)/ (total number of transactions).	<= 0.01% for all levels of verification measured per allocation cycle	None	Not Applicable
		> 0.01% and <= 0.1% for all levels of verification measured per allocation cycle	Liquidated damages of severity level: 6	Not Applicable
		> 0.1% and <= 1% for all levels of verification measured per allocation cycle	Liquidated damages of severity level: 8	Not Applicable
		> 1% for all levels of verification measured per allocation cycle	Liquidated damages of severity level: 9	Not Applicable
2. False Non Match (FNMR)	FNMR = (Number of verification transactions resulting in a false non match in the day)/ (total number).	<= 2% for all levels of verification measured per allocation cycle	None	Not Applicable
		> 2% and <= 3% for all levels of verification measured per allocation cycle	Liquidated damages of severity level: 6	Not Applicable
		> 3% and <= 4% for all levels of verification measured per allocation cycle	Liquidated damages of severity level: 8	Not Applicable
		> 4% for all levels of verification measured per allocation cycle	Liquidated damages of severity level: 9	Not Applicable

2. <u>Performance Level for allocation cycles with total enrolment transaction volumes above 2 Crore</u>

a. The Performance Criteria would be the same as those for cycle with total enrolment transaction volumes between 1 Crore and 2 Crore.

b. However, the Purchase reserves the right to revise the targets for the performance criteria for subsequent cycle of 1 Crore enrolments (from 2 Crore enrolment transaction volumes onwards)

7.3. Operations

Measurement	Definition	Target	Severity Level
Manpower Availability			
Resource availability for Support and Maintenance of Application specified in Annexure E, Scope of work during various phases of the project	No. of shift days for which resource present at the designated location / Total no. of shift days	99% averaged over all resources designated for Biometric Supplier services and calculated on a monthly basis	
		>=97 % to < 99% averaged over all resources designated for Biometric Supplier services and calculated on a monthly basis	7
		>=95 % to < 97% averaged over all resources designated for Biometric Supplier services and calculated on a monthly basis	8
		< 95 % averaged over all resources designated for Biometric Supplier services and calculated on a monthly basis	9

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Measurement	Definition	Target	Severity Level
Resource availability for Help Desk specified in Annexure E , Scope of work during various phases of the project	No. of shift days for which resource present at the designated location / Total no. of shift days	99% averaged over all resources designated for Biometric Supplier services and calculated on a monthly basis	
		>=97 % to < 99% averaged over all resources designated for Biometric Supplier services and calculated on a monthly basis	7
		>=95 % to < 97% averaged over all resources designated for Biometric Supplier services and calculated on a monthly basis	8
		< 95 % averaged over all resources designated for Biometric Supplier services and calculated on a monthly basis	9

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Measurement	Definition	Target	Severity Level
Reporting			
Data Quality Monitoring & Reporting	Refer Annexure E – Scope of Work	Less than 100% adherence to time lines specified in Annexure E, Scope of Work	6
MIS reporting	Refer Annexure E – Scope of Work	Less than 100% adherence to time lines specified in Annexure E, Scope of Work	6
Incident Reporting	Refer Annexure E – Scope of Work	Less than 100% incidents to be provided to Purchaser with in 1 hour with the cause, action and remedy	5

7.4. Trouble Ticket/Issue Resolution

i. "Resolution Time" means time taken (after the trouble call has been logged on the helpdesk), in resolving (diagnosing, troubleshooting and fixing) or escalating (to the second level to respective Vendors, getting the confirmatory details about the same from the Vendor and conveying the same to the end user), the Services related troubles during the first level escalation.

ii. Provisioning of standby, if required, should be done along with associated data being restored, services reinitiated and SLA conditions being met. Final Resolution shall be deemed to be complete only after the original equipment is replaced / reinitiated along with data being restored to the correct state and services are resumed.

Resolution Time	Target	Severity Level
30 minutes	Resolution of 98% of the total calls within the specified limit	
	Resolution of >= 97 to < 98 % of the total calls within the specified	4

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	limit	
	Resolution of >= 96 to < 97 % of the total calls within the specified limit	5
	Resolution of >= 95 to < 96 % of the total calls within the specified limit	6
	Resolution of < 95 % of the total calls within the specified limit	7

8. Signature

IN WITNESS WHEREOF, the parties hereto have caused this Service Level Agreement to be executed by their respective authorized representatives as of the date first written above.

Signed, Sealed and Delivered for & on behalf of M/s L-1 Identity Solutions Operating Company Private Limited

Signed

Name: Machiel van der Harst

Designation: Technical Officer

Date: August 24th , 2010
Place: New Delhi

Signed, Sealed and Delivered for and on behalf of the President of India acting through the Director General, Unique Identification Authority of India.

Signed

Name: B. B. Nanawati, DDG

Designation: Deputy Director General

B. B. Nanawati, DDG
Unique Identification Authority of India,
Planning Commission, Jeewan Bharati,
Connaught Circus, New Delhi-110001

Date: August 24th , 2010
Place: New Delhi

In the presence of:

Signed

Name: Kalidindi R N R
Designation: Director, Business Development, L1 ID
Date: August 24th , 2010
Place: New Delhi

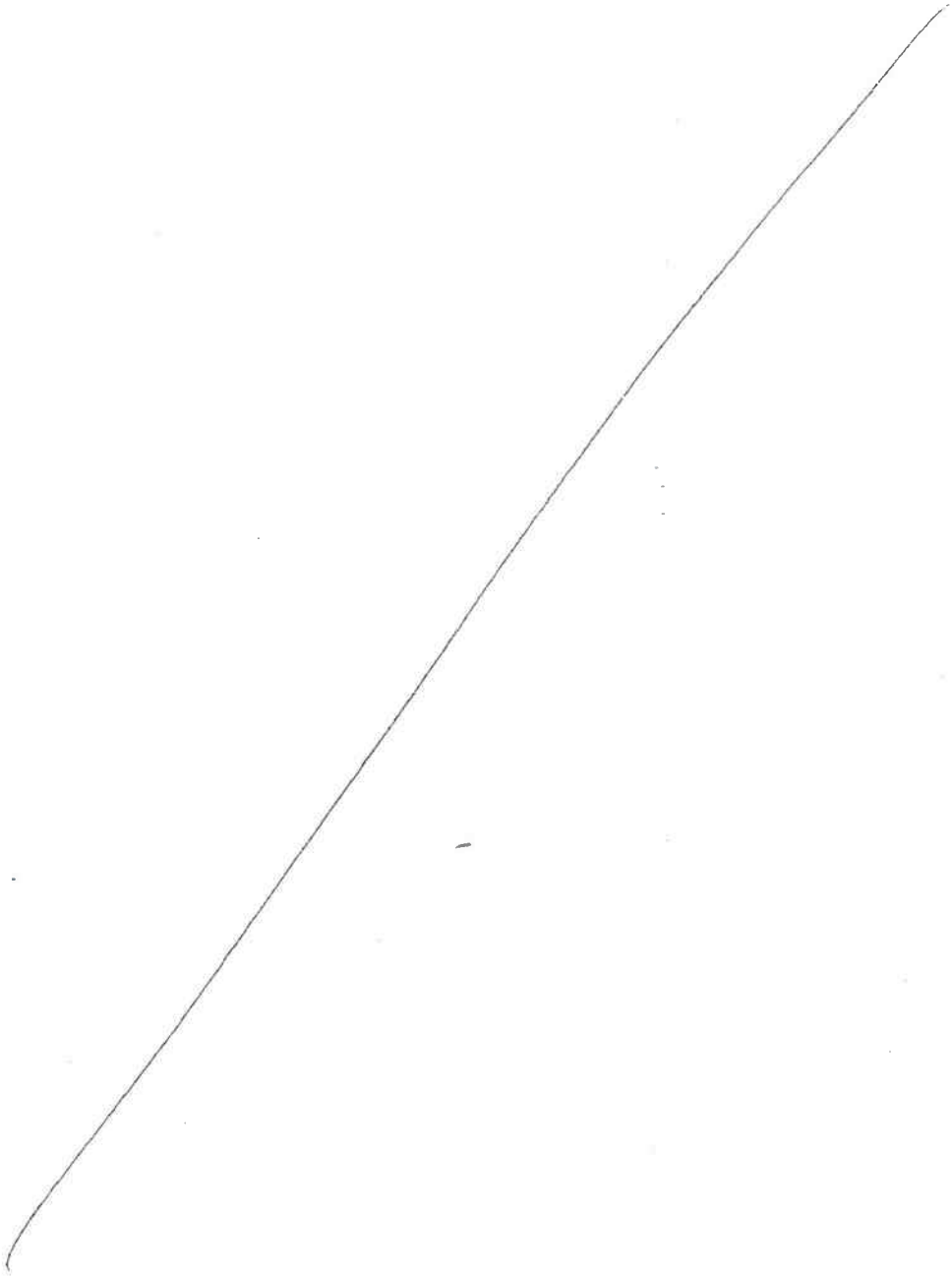
In the presence of:

Signed

Name: Ajay Nandan
Designation: Assistant Director General
Date: August 24th , 2010
Place: New Delhi

AJAY NANDAN
Assistant Director General
Unique Identification Authority of India,
Planning Commission, Jeewan Bharati,
Connaught Circus, New Delhi-110001

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Annexure D

Work Allocation &

Service Level

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Work Allocation & Service Level

1. Allocation of Transaction Volumes to Biometric Solution Providers

1.1 Overview

i. UIDAI shall select three Biometric Solution Providers for the undertaking the scope of work as stated in **Annexure E – Scope of Work.** Based on the estimates of expected demand for enrolments during the contract period, UIDAI shall adopt a method of dynamic allocation of enrolment transactions to the selected Biometric Solution Providers.

1.1.1 Definitions of Terms

i. 1 Crore = 10 million

ii. 1 Lakh = One Hundred Thousand

iii. **"Biometric Solution Provider"** The party who is awarded the contract, on being selected using the process stated in the RFP, to provide services as mentioned in the **Annexure E – Scope of Work.**

iv. **"Enrolment transactions"** The transaction to perform de-duplication in order to check if there exists any duplicate(s) for the subject being enrolled

v. **"Allocation Cycle"** The period for which the allocation of transactions volumes to Biometric Solution Providers remains fixed. The duration of the cycle shall be 3 (Three) months or till the completion of 1 (One) Crore new enrolment transactions, whichever is earlier. Each allocation cycle can hence have a maximum of 1 Crore enrolment transactions.

vi. **"Allotted Enrolment transactions"** The transaction allotted to a Biometric Solution Provider to perform de-duplication in order to establish if there exists any duplicate(s) for the subject being enrolled

vii. **"Normal Operations"** The regular course of operations whereby the Biometric Solution Provider receives it allotted share of enrolment transaction volumes based on computation of allocation among all the Biometric Solution Providers

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viii. **"Non performance of a Biometric Solution"** If the solution provided by a Biometric Solution Provider does not meet even minimum limit of accuracy for de-duplication in a cycle, then it is treated as non performance of the Biometric Solution. Any drop in accuracy of the de-duplication checks by the Biometric Solution below certain limits shall be treated as non performance of the Biometric Solution Provider. The accuracy shall be measured by service levels under category 'Accuracy' in Clause 7.2.1 Biometric De-Duplication - Performance Levels effective from Release 2 of Draft Service Level Agreements. A measurement of service level below the stated limits shall be treated as non performance of the Biometric Solution Provider.

ix. **"Transfer of Volumes"** Assignment of a certain part or the whole share of the enrolment transaction volumes of a Biometric Solution Provider for the next cycle, to one or more Biometric Solution Providers before the commencement of the next cycle in addition to their respective shares of volumes.

x. **"Probation"** A period during which the Biometric Solution Provider cannot undertake its normal operations based on allocation of enrolment transaction volumes. During Probation, only a limited percentage of its normal allotted share of enrolment transaction volumes is provided to the Biometric Solution Provider. The period of probation is equal to the duration of the next Allocation cycle in which it is kept under probation.

xi. **"Rehabilitation"** A period during which the Biometric Solution Provider cannot undertake its normal operations. During Rehabilitation, the Biometric Solution Provider shall not receive any allocation of enrolment transaction volumes from the next cycle onward unless it successfully meets the acceptance criteria of the testing conducted by UIDAI after a certain period of time.

xii. **"False Positive Identification"** A term applying to de-duplication transactions only. An incorrect decision of a biometric system that an applicant for a UID has previously been enrolled in the system, when in fact they have not.

xiii. **"False Positive Identification Rate (FPIR)"** A term applying to de-duplication transactions only. The ratio of number of false positive identification decisions to the total number of enrollment transactions by un-enrolled individuals. This rate is expected to depend upon the size of the enrolled database and the database binning/partitioning used. Enrolled database size will be specified.

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xiv. **"False Negative Identification"** A term applying to de-duplication transactions only. An incorrect decision of a biometric system that an applicant for a UID, making no attempt to avoid recognition, has not previously been enrolled in the system, when in fact they have. This failure to match might be caused by any algorithm in use by the system (segmentation, comparison, binning, quality, etc.).

xv. **"False Negative Identification Rate (FNIR)"** A term applying to de-duplication transactions only. The ratio of number of false negative identification decisions to the total number of enrollment transactions by enrolled individuals. This rate is expected to depend upon the database binning/partitioning used to meet throughput requirements. Enrolled database size will be specified. As no failure-to-enroll decisions will be permitted for residents with any of the 12 biometrics available, failure-to-enroll rates are presumed to be zero and will not be considered in computing the false negative identification rate. Data from residents with none of the 12 biometrics will be exempted from the calculation of this rate.

2. Dynamic Allocation

i. UIDAI shall allocate the transaction volumes related to enrolment to the selected Biometric Solution Providers based on the performance of their respective solution, as deployed, on following parameters respectively:

a. Accuracy, measured in terms of FPIR and FNIR, of De-Duplication checks
b. Speed of De-duplication
c. Hardware Resources used by the biometrics solution

ii. The total number of enrolment transactions during the contract period is expected to be 20 Crores and the same shall be divided into multiple cycles called as Allocation Cycle with duration of 3 months per cycle. Following indicates the distribution of enrolment transaction volumes across allocation cycle. An allocation cycle can have a maximum of 1 Crore enrolment transactions

Table 1 - Allocation Cycles*

S.No	Range of enrolment transactions	Cycle Name
1	0 to 1 Crore transactions	Cycle 1
2	1 to 2 Crore transactions	Cycle 2

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S.No	Range of enrolment transactions	Cycle Name
3	2 to 3 Crore transactions	Cycle 3
4	3 to 4 Crore transactions	Cycle 4
5	4 to 5 Crore transactions	Cycle 5
6	5 to 6 Crore transactions	Cycle 6
7	6 to 7 Crore transactions	Cycle 7
8	7 to 8 Crore transactions	Cycle 8
9	8 to 9 Crore transactions	Cycle 9
10	9 to 10 Crore transactions	Cycle 10
11	10 to 11 Crore transactions	Cycle 11
12	11 to 12 Crore transactions	Cycle 12
13	12 to 13 Crore transactions	Cycle 13
14	13 to 14 Crore transactions	Cycle 14
15	14 to 15 Crore transactions	Cycle 15
16	15 to 16 Crore transactions	Cycle 16
17	16 to 17 Crore transactions	Cycle 17
18	17 to 18 Crore transactions	Cycle 18
19	18 to 19 Crore transactions	Cycle 19
20	19 to 20 Crore transactions	Cycle 20

*Note:- No. of allocation cycle shall depend on the rate of actual enrollments undertaken during the Contract period

3. Rules of Allocation

i. The duration of an allocation cycle shall be 3 (Three) months or till the time of completion of 1 (One) Crore new enrolment transactions, whichever is earlier. Each allocation cycle can hence have a maximum of 1 Crore enrolment transactions.

ii. The enrolment transactions in Cycle 1, i.e., from Zero to 1 Crore Transactions shall be assigned to all the Biometric Solution Providers, meaning, each Biometric Solution Provider shall perform successful de-duplication check on the same 1 Crore subjects.

iii. From Cycle 2 onwards, daily volumes shall be allocated separately to Biometric Solution Provider in proportion of the total volumes per day.

iv. The proportion of allocations across Biometric Solution Providers shall remain fixed for the allocation cycle under consideration. The maximum allocation of enrollment

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transactions for a Biometric Solution Provider, during normal operations shall not go beyond fifty percent (50%) of total daily enrolment transactions irrespective of the performance in the previous cycle.

v. For the purpose of allocation of volumes for Cycle 2, performance of the Biometric Solution during the last Ten Lakh enrolment transactions of Cycle 1 (only the first one crore enrolment transactions) shall be considered.

vi. The performance of the solution of each Biometric Solution Provider shall be measured at the end of each cycle based on computation of Accuracy, Speed of the solution and Hardware Resources used using test cases provided by UIDAI.

vii. From Cycle 3 onwards (till Cycle 20), the allocation of volumes to Biometric Solution Provider shall be based on performance measurement made on their respective solution for all transactions undertaken in the previous cycle. Hence, the relative performance of a Biometric Solution in the previous cycle shall determine the allocation of the enrolment transactions for the next cycle.

viii. The Biometric Solution of each Biometric Solution Provider shall adhere to performance levels as stated in **Clause 7.2 of Annexure C - Service Level Agreement.**

4. **Non Performance of a Biometric Solution and Rules of Allocation**

i. Any drop in accuracy of the de-duplication checks by the Biometric Solution Provider below certain limits as specified by UIDAI shall be treated as non performance of the Biometric Solution Provider. The accuracy shall be measured in form of service levels under category 'Accuracy' in **Clause 7.2.1 of Annexure C - Service Level Agreement**. A measurement of service level below the stated limits shall be treated as non performance of the Biometric Solution.

ii. In the event of non performance by a Biometric Solution due to poor accuracy, as measured using the Service Levels at the end of each cycle, the Biometric Solution Provider shall only receive fifty percent (50%) of volumes it is entitled to in the next cycle, i.e., based on regular computation of allocations across the Biometric Solution Providers in normal operations.

a. In such a case, the remaining fifty percent (50%) of volumes that would have otherwise been allotted to the non performing Biometric Solution Provider during normal operations shall be distributed equally to other Biometric Solution Providers
b. The transfer of enrolment transaction volumes to other Biometric Solution Provider shall add to the volumes allotted to them as per the regular computation during normal operations.
c. The limit of maximum allocation to a Biometric Solution Provider as stated in Rule 4 in **Clause 4** – Rules of Allocation above (maximum of 50%) shall not be applicable in such cases, meaning, a Biometric Solution Provider may receive more than fifty percent of total enrolment volumes in a cycle on account of non performance of one or more of other Biometric Solutions.

iii. In the event of non performance by a Biometric Solution due to poor accuracy, as measured at the end of each cycle, the Biometric Solution shall be kept under Probation and its performance shall be reviewed at the end of the Allocation Cycle

a. If the performance, in terms of accuracy, of the solution in the next cycle meets the acceptable service level targets under category 'Accuracy' in **Clause 7.2.1 of Annexure C - Service Level Agreement**., then the Biometric Solution Provider shall be relieved of Probation and shall be allowed to resume normal operations.

1. On resuming normal operations, the Biometric Solution Provider shall be allotted its full share of the allocations for the next cycle as computed across all Biometric Solution Providers.
2. All service levels would be measured as per the criteria to be defined by UIDAI.

b. If the performance, in terms of accuracy, of the solution in the next cycle, continues to remain below the minimum acceptable level, then the non performing Biometric Solution shall be moved out of production and kept under Rehabilitation.

1. Under Rehabilitation, the non performing Biometric Solution shall not receive any allocation of enrolment transaction volumes from the next

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cycle onward unless it successfully meets the acceptance criteria of the testing conducted by UIDAI every quarter.

2. In such a case, all the volumes that it was entitle to allotted during normal operations shall be distributed equally to other Biometric Solution Providers.
3. The transfer of enrolment transaction volumes to other Biometric Solution Provider shall add to the volumes already allotted to them.
4. The limit of maximum allocation to a Biometric Solution Provider as stated in Rule 4 in **Clause 4** – Rules of Allocation above shall not be applicable in such cases, meaning, a Biometric Solution Provider may receive more than fifty percent of total enrolment volumes in a cycle on account of non performance of one or more of other Biometric Solutions.
5. The performance of the Biometric Solution under rehabilitation shall be reviewed at the end of the quarter by UIDAI by conducting a test using a separate test bed of enrolment volumes. Please refer to the **Clause 4.1** - Performance Testing of Biometric Solution for more details
 - The Biometric Solution Provider may choose to undertake the test before the end of the quarter. However, the cost of such early testing shall be fully borne by the Biometric Solution Provider

6. If the non performing Biometric Solution Provider successfully meets the acceptance criteria of the testing conducted by UIDAI, it shall be shall be relieved of Rehabilitation and shall be allowed to resume normal operations by moving into Production.

 - On resuming normal operations, the Biometric Solution Provider shall be allotted 10 Lakhs transaction for the next cycle Biometric Solution Provider
 a. On meeting the service levels successfully as measured at the end of the cycle. the Biometric Solution Provider shall be given its full share of allocations for the next cycle

 b. If the Biometric Solution fails to meet the minimum service levels for the allotted 10 Lakh transactions, the contract of the Biometric Solution Provider shall be terminated immediately

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7. If the non performing Biometric Solution does not meet the acceptance criteria of the testing conducted by UIDAI, the contract of the Biometric Solution Provider shall be terminated immediately. In such a case, UIDAI reserves the right to appoint another Biometric Solution Provider in addition to the existing Biometric Solution Providers

4.1 Performance Testing of Biometric Solution

ABIS will be tested on performance using continuous and period testing.

Continuous Testing: Continuous testing shall cover measurements for the following parameters:

1. Speed: throughput rate per day
2. Hardware utilization: utilization of hardware for quality check, template generation, insertion and de-duplication (IDENTIFY method) each
3. FMR and FPIR

Periodic Testing

The periodic testing will involve use of probes with known duplicates and non-duplicates to measure FMR, FNMR, FPIR and FNIR. Prior to probes, the vendor will be provided sufficient training data to tune ABIS. It is the intention of UIDAI to generate near continuous "probe" data to generate continuous FNMR and FNIR.

Each ABIS will be expected to perform with an accepted band of performance in each of three dimension — Speed, accuracy and resources (H/W, power, DC space etc.). If any ABIS crosses acceptable band, reallocation of the workload will be triggered.

The reallocation of workload, subject to conditions listed above for the SLA, will be based on accuracy, speed and resource optimization. The basic principle governing relocation is to optimize accuracy while maintaining requisite speed for a given configuration. The precise formula will be provided at the time of the reallocation event. UIDAI reserves the right to change the governing principle if operating constraints are changed

5. Service Level

For details of Solution related performance levels, please refer to **Clause 7.2 of Annexure C - Service Level Agreement.**

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Annexure E

Scope of Work

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Scope of Work

1 INTRODUCTION

1.1 Objective

The aim of this Request for Proposal is to select three Biometric Solution Providers to design, supply, install, configure, commission, maintain and support (a) multi-modal Automatic Biometric Identification Subsystem (ABIS) and (b) multi-modal Software Development Kit (SDK) for client enrollment station, verification server, manual adjudication and monitoring function of the UID application.

1.2 Background

The UIDAI has been setup by the Government of India with a mandate to issue Unique Identification numbers (UID Numbers) to all the residents in the country. UIDAI proposes to create a platform to enroll the residents of the country, issue UID Numbers. These numbers may then be used for authentication. This can be used by several Government and private organizations for better delivery of services to residents.

1.3 Intent of UIDAI

The purpose of the UIDAI is to issue UID Numbers that are (a) robust enough to minimise / eliminate duplicate and fake identities, and (b) can be verified and authenticated in an easy, cost effective way. UIDAI will use common demographic and biometric data for establishing and verifying identity, therefore, it becomes essential to standardize these data fields and verification procedures across its registering partners (Registrars). This will aid interoperability across many systems that capture information and work with the residents.

UIDAI has selected biometrics as the primary method to check for duplicate identity records. In order to ensure that an individual can establish their identity uniquely in an easy and cost-effective manner, it is essential that the captured biometric information is of a quality and standard that is capable of being de-duplicated. Further, for authentication of identity at the time of service delivery by Government and private organisations, it is essential that the biometric information capture and transmission are standardized across all users of the UID Application.

In order to set these standards two committees were set up by the UIDAI. The Demographic Data Standards and Verification procedure Committee constituted under by UIDAI and the Biometrics Committee have submitted their final reports. These reports are available on the UIDAI website http://uidai.gov.in.

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1.4 Understanding UID System

India will be the first country to implement a biometric-based unique ID system on such a large scale. The UID will serve as a universal proof of identity, allowing residents to establish their credentials anywhere in the country. It will give the Government a clear view of India's population and enable it to track and deliver services and resource flows effectively, thereby achieving greater returns on social investments. Confirming 'you are who you say you are' remains the primary, often elusive goal of all identity systems.

The UIDAI approach – which will be online authentication, with biometric check – creates a very strong authentication system, and gives the UIDAI significant ability to confirm an individual's identity. The UIDAI will support the Registrars in building the infrastructure and systems necessary to authenticate residents in different parts of the country. This will be especially critical for Registrars working in rural areas and among the poor.

1.5 Goals of UID System

For details on the goal of UID system, refer to the document on UIDAI's website titled "Creating a unique identity for every resident in India - Draft approach" http://uidai.gov.in/documents/Creating%20a%20unique%20identity%20for%20every%20resident%20in%20India.pdf

1.6 Key Features of UID System

1. Identity – every resident can have a lifelong ID number that will be commonly accepted across multiple systems within India. That number will be linked to limited demographic information, such as name, residence, date of birth and gender, establishing an official "identity" for each resident.

2. Authentication – Is the process of ascertaining a person's identity, supports answering the basic question "is a resident the person he/she claims to be".

3. Standardization – Standardization of Know Your Resident (KYR) Data and Processes, and Biometric Standards in order to achieve interoperability across organizational users of the system.



1.7 Glossary

Table 1 – Glossary

Term	Definition or Meaning
UIDAI	The regulatory body that will design, develop, and deploy the UID Application with the help of service providers
Registrar	Any Government, private or non-Governmental agency that can enroll and authenticate residents using the UID Application.
Enrolment Agency	The agency that will actually enroll residents by capturing their demographic and biometric information in the field. They will be setup or employed on behalf of the Registrar
UID Server	The central server that responds to enrolment and authentication requests.
Registrar System	The registrars IT systems and processes
Enrolment Client	Software provided by the UIDAI to Registrar/Enrolling Agencies in order to enrol residents into the UID system.
Biometric Solution	Consists of two biometric components: ABIS and multi-modal SDK.
ABIS API	API to communicate between UID Application & ABIS.
BSP	Biometric Solution Provider supplying biometric solutions (ABIS and multi-modal SDK).
MSP	Managed Service Provider
CIDR	Central Identity Repository, which is the database and de-duplication/verification application
BCP	Business Continuity Planning
Verification	The process of comparing a query biometric sample to a stored biometric reference to determine if they came from the same person
Authentication	The process of validating a claim that a UID number belongs to a particular resident using biometric or non-biometric means
UID Application	UID Software for enrolment and authentication. In the current context, it is used to indicate non-biometric portion of UID software. Occasionally, it is a synonym for UID server.
Scaled fusion	Score of similarity returned by ABIS. Also called normalized fusion

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Term	Definition or Meaning
score	score. It ranges between [0 and 100] where 100 is most similar and 0 is least similar.
SDK	Software Development Kit comprises of computational algorithm for quality analysis, segmentation, feature extraction, comparison score generation for fingerprint, iris and face modalities.

2 STAKEHOLDERS

2.1 Unique Identification Authority of India (UIDAI)

UIDAI has been setup by the Government of India with a mandate to issue Unique Identification numbers (UID Numbers) to all the residents in the country. It is regulatory body responsible for the success of the entire project.

2.2 UIDAI Technology Team at Bengaluru:

The technology team works under the direction of UIDAI to design, develop and advise on the technology solution.

2.3 Biometric Solution Provider (BSP)

A BSP shall work under the direction of the technology team to design, supply, integrate, install, commission and maintain the biometric solution.

2.4 Project Management Consultant (PMC):

PMC shall assist UIDAI in defining the scope of services and selecting BSP and Managed Service Provider, in selecting data center and providing overall project management of the CIDR project. M/s Ernst & Young Pvt Ltd has been selected as the PMC.

2.5 Application Software Development, Maintenance and Support Agency (ASDMSA):

ASDMSA provides application software development and maintenance services for the UID application. ASDMSA will develop biometric based enrollment software. ASDMSA will develop and assist in testing biometric solution interface. M/s Mind Tree Ltd. has been selected as ASDMSA.

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2.6 Project Management Unit (PMU):

UIDAI has set-up a Project Monitoring Unit (PMU) at its headquarters, to monitor the timely and effective implementation of the project. The PMU will be responsible for the overall planning and execution of the UID project, under the guidance of UIDAI.

2.7 Managed Service Provider (MSP)

MSP operates data center, manages UID application, is responsible for overall operation and logistics and supports registrar on-boarding. MSP is expected to be selected in October 2010.

2.8 Data Center (DC)

The entire UID application, with the exception of the enrollment centers and authentication request stations, will be housed at the Data Center (DC), initially a single physical center, but potentially dividing into multiple centers during the course of the project. The DC will provide infrastructure facility, off-site backup storage and support movement of physical material between DC and Disaster Recovery Center.

3 UID System Overview

3.1 High Level System Overview

The UID Server System consists of the UID application existing within a cloud computing environment. UID Server System is deployed centrally on one or distributed over many data centers and provides various services over a secure network. Main application modules are "Enrolment Module" and "Authentication Module". In addition, various other modules for administration, analytics, reporting, fraud detection, portal user interface, etc. are also part of the UID Server System.

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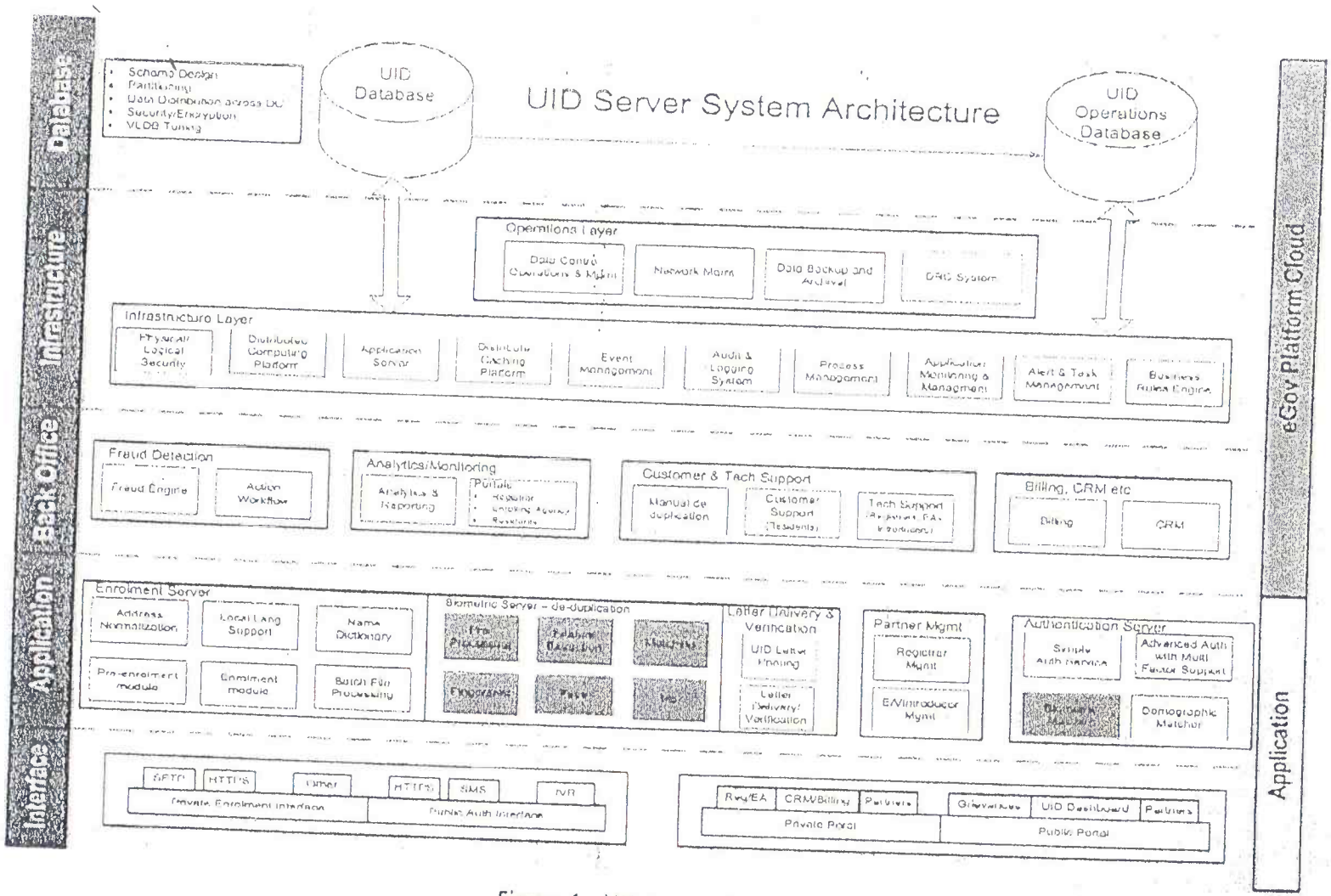


Figure 1 - UID Server System

(Orange boxes indicates components to be provided by the BSP)

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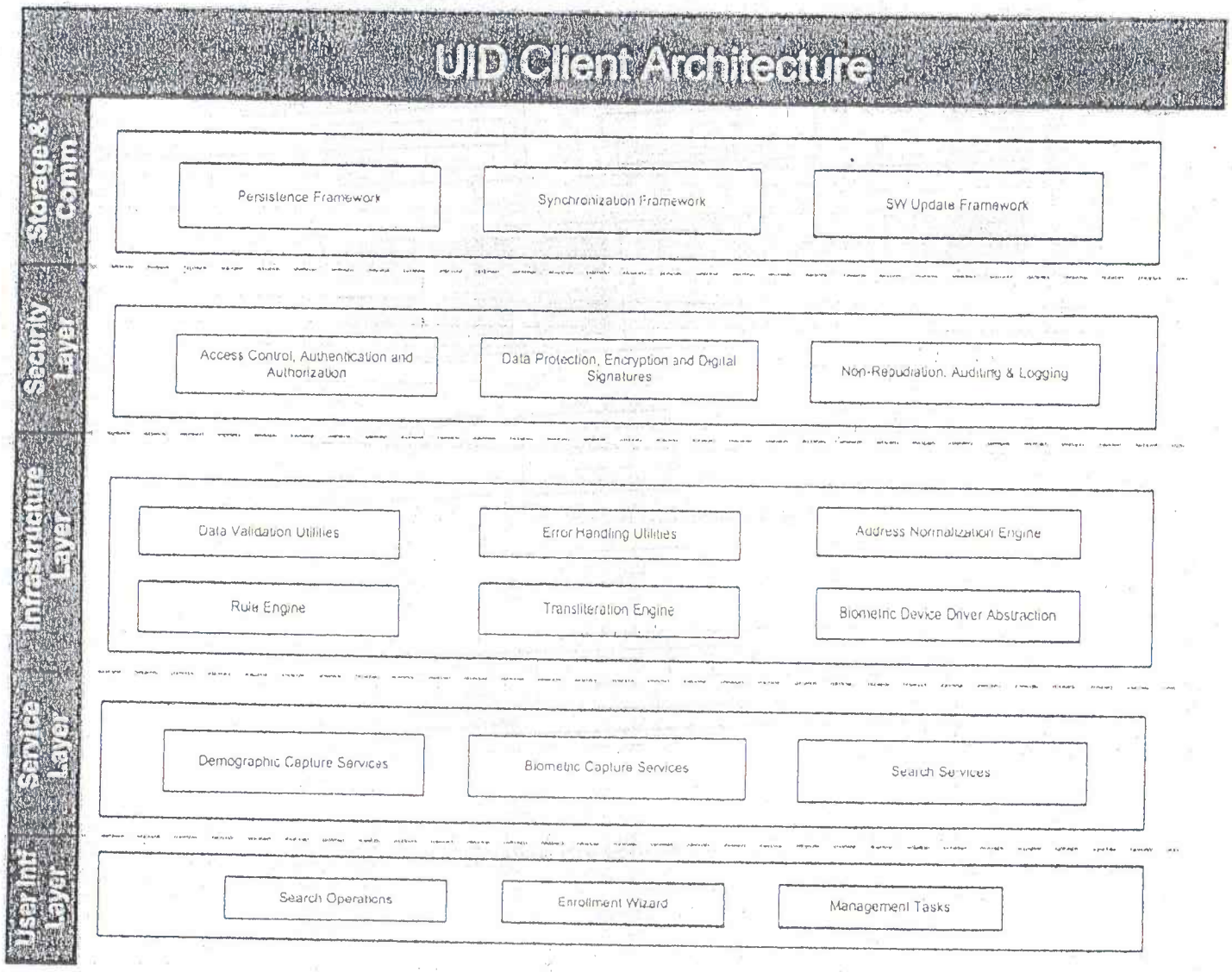


Figure 2 - UID Enrolment Client System

On the other hand, UID Enrolment Client is a rich client application that can be deployed on a large number of computers in the field and works in offline disconnected mode. Enrolment agencies will use the client software within their systems to enrol residents in the field and upload data onto the server in a batch mode. The BSP will supply only an SDK (described later in this document) that is will be embedded in the Enrolment Client.

3.2 Biometric Solution Design Principles

1. **Modularity**: The design must allow for replacement and updating of components, perhaps from various vendors, without any impact on the remaining components. The components in this context should be as fine grained as possible. For example, the enrolment server and authentication server are fully decoupled and will use separate database and could use different matcher.
2. **Standards**: Use of the standards prescribed by UIDAI is mandatory. All interfaces to the outside systems must be based on current industry standards adopted by UIDAI for maximum interoperability. Use of open source also aids in standardization.
3. **Avoidance of vendor lock-in**: In the area of biometrics, proprietary algorithms and data representation are perhaps required to achieve performance and accuracy requirements of the UIDAI. The system is designed such that these algorithms and data representation form a part of the black box, **and the entire box or a sub-system can be** replaced without any impact on the other biometrics black boxes. For example, one can replace biometric de-duplication module without any impact on the biometric verification module. All proprietary data formats needed within each solution are not exposed outside of the black box.
4. **Resident Convenience**: The entire process of enrolment and authentication must be conducted with strict conformance to quality and precision. At the same time, the process will provide transparency, flexibility and convenience to the residents. For example, the collection of biometric features will have user interface that is consistent with these requirements.
5. **Risk Mitigation**: India is the largest country to undertake biometric collection of the entire population and biometric authentication for service delivery. BSPs are yet to build systems on such a scale. Consequently it is not possible to predict scalability of the present offerings against the demographics of India. As the quality and availability of biometric measures across the population is currently not known, alternate methods for de-duplication and fall-back strategy must be incorporated in the design should the primary strategy fall short of the UIDAI goals.

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6. **Universality:** To support scalability and inclusiveness of the solution, three biometric modes will be collected fingerprint, face and iris. Ten fingerprints will be collected as "slaps" ("4-4-2"). Iris images will be collected in pairs and facial image will be full frontal. The deduplication should utilize fingerprint and iris images.
7. **Security:** Biometric Solution must be secure and conform to Government of India's data security and UID's security guidelines, including encryption and decryption. For example, all personal information stored on a permanent storage media must be encrypted.
8. **Enrolment data quality:** The quality of data depends on enrolment process and technology. UIDAI will use best practices for enrolment process and utilize optimum technology to capture best quality of data while ensuring that no one is denied enrolment due to poor biometric data. A number of techniques such as operator enrolment and verification of enrollee's biometric against all registered operators and supervisors will be performed at the enrolment station.
9. **Service Oriented Architecture:** The biometric components follow SOA principles. They provide specific services using well defined interfaces.
10. **Isolation.** ABIS will not have access and should not try to access any network resources except the resources referenced by the URLs provided through the API.
11. **DBMS** – The DBMS should be compatible with RDBMS of UID application and should be able to import/export data with ease
12. **Distributed Database** – Solution should provide distributed database for the purpose of authentication

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3.3 System level Information flow

3.3.1 Enrolment Process Information Flow

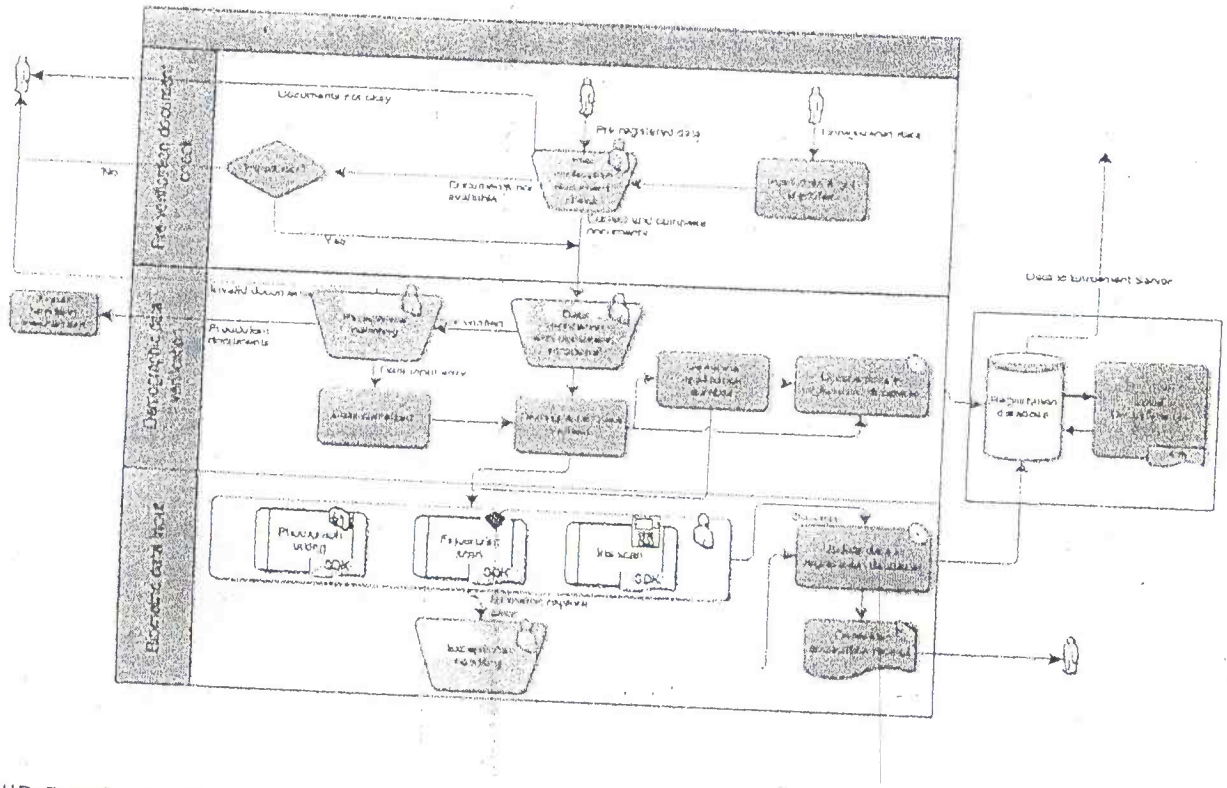


Figure 3 - UID Enrolment Process Information Flow (Orange indicates components to be provided by the BSP)

The UID enrolment client is a rich client application being developed by the UIDAI. Further details of the information flow can be found in ASDMSA Volume II. The BSP will provide SDKs to support the collection, pre-processing and matching of face, iris and fingerprint dat

3.3.2 Enrolment Server

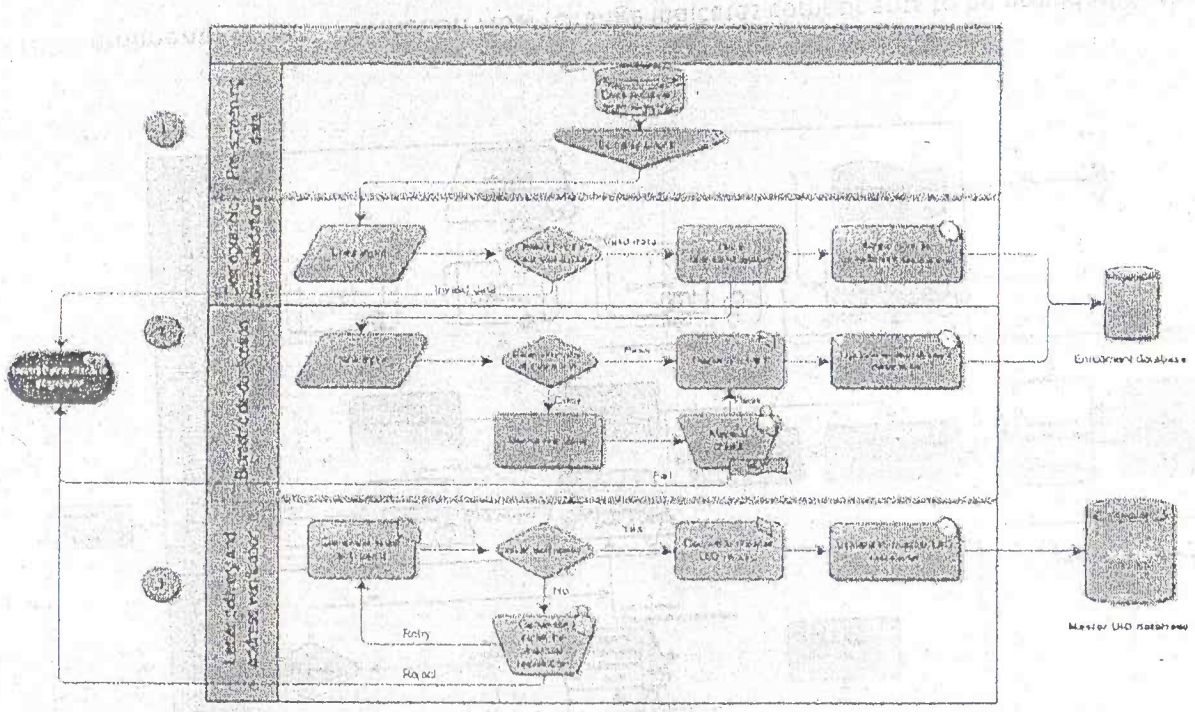


Figure 4 - Enrolment Server Information Flow

(Orange indicates components to be provided by the BSP)

The enrolment server is a logically centralized system running on the e-governance cloud. Further details of the information flow can be found in ASDMSA Volume II. The BSP will be fully responsible for the biometric de-duplication module within the Biometric De-Duplication Layer (Layer 2 in Figure 4), including maintenance of a de-duplication database and a physically separated and synchronized disaster recovery database.

3.4 Authentication Server

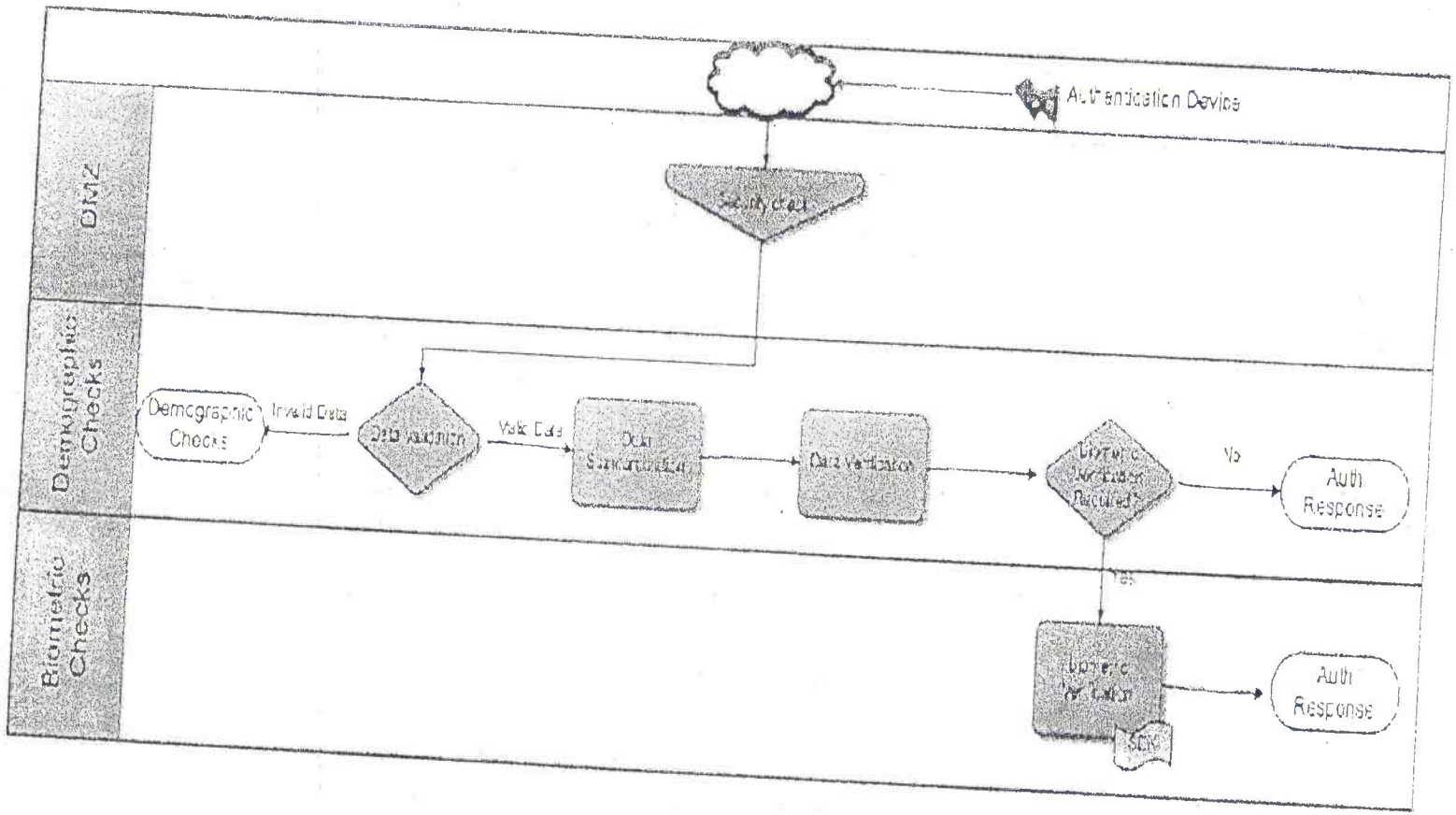


Figure 5 Authentication Server Information Flow

(Orange and yellow indicate components to be provided by the BSP)

Online authentication, to validate the residents' claim to UID numbers at points of service, is supported by the UID system. Approaches to verification can be flexible to accommodate different levels of assurance:

- Online demographic authentication, where the authenticating agency compares the UID number and demographic information of the UID holder to the information stored in the UID database. The assurance level here is medium and does not involve the BSP.
- Online biometric verification where the biometrics of the UID holder, his/her UID and key demographic details are compared to the details in the CIDR. The comparison of submitted biometric samples to stored biometric references to support this process will be the responsibility of the BSP. The assurance level in this case is high.

UIDAI expects an extremely large volume of verification requests each day once the UID number is widely adopted within various systems across the country. To cater to such large volumes, all verification requests are "stateless", containing all information required for the verification transaction within each request message. This means that no "state" should ever be maintained on the server and every request should be serviced as if it is a new request. Authentication clients should maintain necessary state during interaction with the resident to allow error handling, retries, and overall provide a friendly experience to residents.

4 Biometric Solution Components

Two biometric components are utilized in five modules of the UID System. The biometric components are:

1. Automated Biometric Identification Subsystem (ABIS): ABIS will be used in the Enrolment Server as a part of the multi-modal biometric de-duplication solution. In the early release, ABIS will also be used in the Authentication Server for verification. The ABIS will maintain its own database of proprietary fingerprint and iris templates for de-duplication (and face templates at the discretion of the vendor), and must be able to respond to verification requests accompanied by fingerprint and/or iris images, as well as ISO/IEC 19794-2:2005 format fingerprint minutiae files. Vendors will work with the UIDAI to provide further specification within 19794-2 to promote interoperability with future verification clients.
2. Multimodal SDKs: SDKs will be used in the enrolment client, manual check (for duplicates), authentication server (for later releases) and the analytics module. The SDK may contain signal detection, quality analysis, image selection, image fusion,

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segmentation, image pre-processing, feature extraction and comparison score generation for fingerprint, iris and face modalities.

In summary, the following UID System modules utilize biometric components:

1. Multi-modal de-duplication in the enrollment server
2. Verification subsystem within the authentication server
3. Enrolment client
4. Manual checks and exception handling
5. Biometric sub-system monitoring and analysis

The functional requirements of the five areas are described, followed by the overall functions of the two biometric components.

4.1 UID System Requirements of the biometric components

4.1.1 Multi-modal Biometric de-duplication in the Enrolment Server

Considering the expected size of the de-duplication task, the UID enrolment server will utilize:

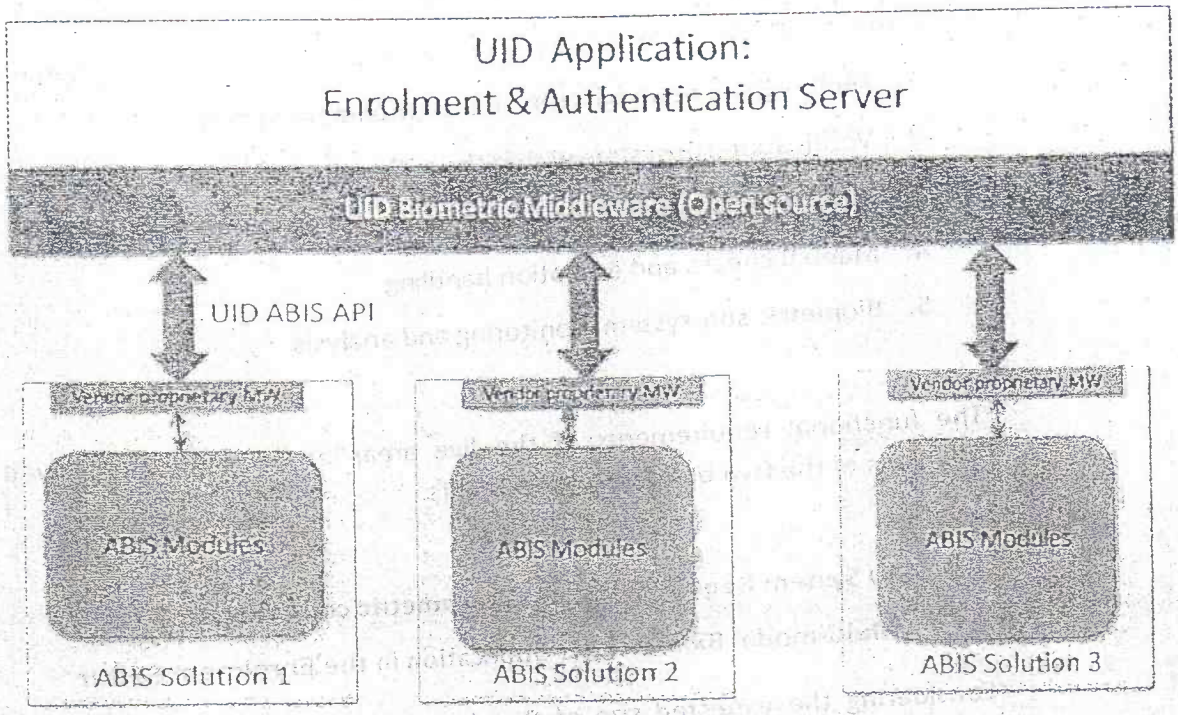
1. Multi-modal de-duplication. Multiple modalities – fingerprint and iris will be used for de-duplication. Face photograph is provided if the vendor desires to use it for de-duplication. *While certain demographical information is also provided, UIDAI provides no assurance of its accuracy.* Demographic information shall not be used for filtering during the de-duplication process, but this capability shall be preserved for potential implementation in later phases of the UID program. Each multi-modal de-duplication request will contain an indexing number (ReferenceID)[1] in addition to the multi-modal biometric and demographic data. In the event one or more duplicate enrolments is found, the ABIS will pass back the ReferenceID of the duplicates and the scaled comparison scores upon which the duplicate finding was based. The scaled fusion score returned with each duplicate found will have a range of [0, 100], with 0 indicating the least level of similarity and 100 as the highest level of similarity.

[1] ABIS will not be aware of the UID #, nor will it be aware of how UID #maps to reference ID or records in the reference DB.

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2. Multi-vendor. Multiple complete multi-modal solutions from more than one vendor will be used as shown in



3. Figure 6. The UID Application will determine routing of a particular de-duplication request. It may determine to route a particular de-duplication request to more than one biometric solution. If it routes a de-duplication request to more than one solution, it is responsible for determining the final outcome of the de-duplication request. In other words, fusion of the scores across the multiple ABIS is not within the scope of this RFP. The UID ABIS API specifies the interaction between UID Application and ABIS.

 The middleware included in the UID application (being developed by ASDMSA) is meant to provide vendor independence and standardization. The key features of the middleware is

 a. Routing and mediation.

 b. Guaranteed delivery

 c. Fault tolerance and load balancing

 d. Open standard based messaging (AMQP) using open source RabbitMQ

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e. Transparent connectivity to analysis and system monitoring modules of UID applications

f. Support of web 2.0 based UID ABIS API and CBEFF data format standard

g. Encapsulation and isolation of ABIS components

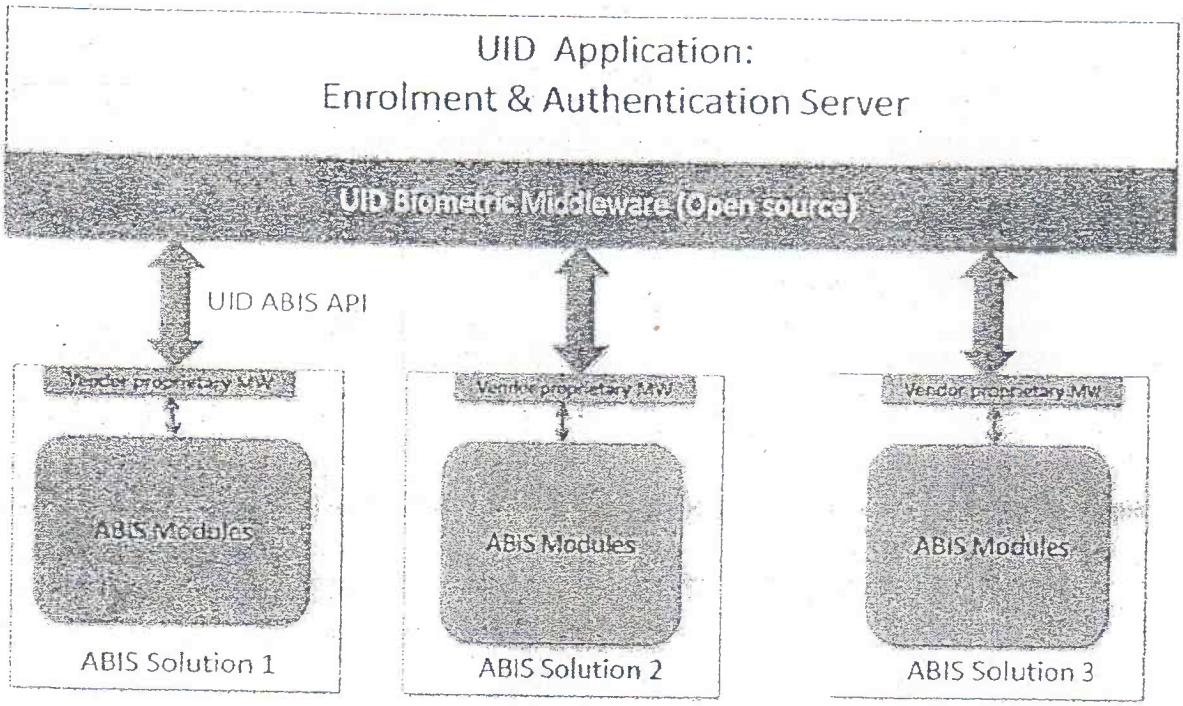


Figure 6 Authentication Server De-duplication

(Orange indicates components to be provided by the BSP)

4.1.2 Verification Subsystem of Authentication Server

In the first release of the UID server, the biometric verification module, as shown in Figure 7, provides verification *within* the authentication server. The solution should be capable of 1:1 verification comparisons of enrolled references with incoming ISO/IEC 19794-compliant fingerprint, iris or face images or 19794-2 compliant fingerprint minutiae sets without proprietary extended data. Figure 7 illustrates both the verification and de-duplication subsystems to be supplied by the BSP.

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For the purpose of distributed authentication by UIDAI at a later stage, the biometric verification module may be constructed using SDK. While the functionality of the verification subsystem will not change, the internal architecture may change. The templates will be maintained in memory resident database by the UID authentication server application (not in scope of BSP). If the incoming requests contain a biometric image, the Authentication server will use SDK to extract the feature. SDK will also be used to generate comparison score of the sample. The decision for distributed authentication will rest with UIDAI and will be binding on the BSP

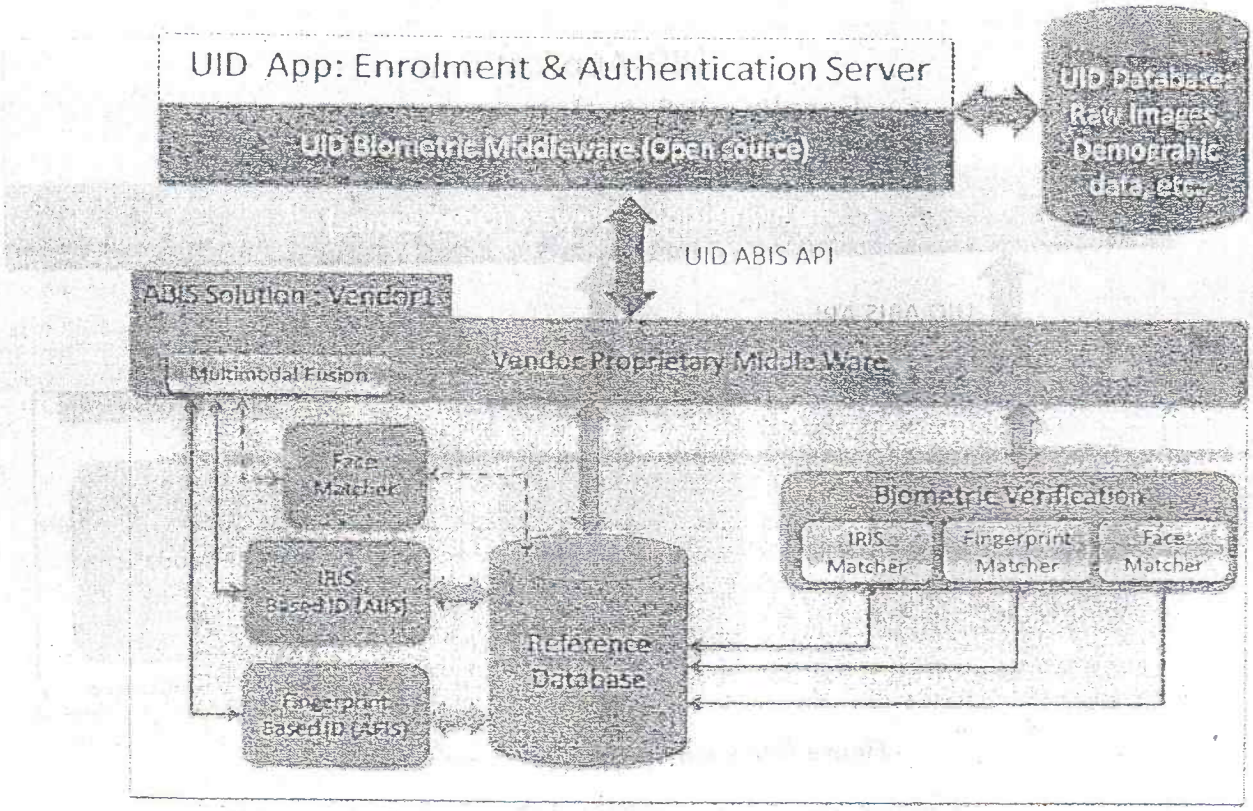


Figure 7 Verification and De-duplication Server

(Orange indicates components to be provided by the BSP)

4.1.3 Enrolment Client

The multimodal SDK to be supplied by the BSP should include the following functions

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1. Fingerprint Slap Segmentation / Sequence Check. Upon fingerprint image capture, it may be required to check if the correct slap was captured, and also segment it into each digit.

2. Quality check. Each modality image requires checking for capture quality to initiate re-capture if needed and provide actionable feedback (such as guidance on finger repositioning) to the operator.

3. Image enhancement. Face photos may require image enhancement such as auto cropping and auto rotation to meet industry standard. Iris images may require cropping to KIND_CROPPED (formerly called Kind 3) or KIND_CROPPED_AND_MASKED (formerly Kind 7) format. No gray-level image alteration will be allowed.

4. Feature extraction. In a number of cases, fingerprints, faces and/or irises will be matched locally. Such cases include verification of operator or supervisor authorizing override requests and local de-duplication of enrolled images. The client software will need to extract features locally. If sufficient features cannot be extracted, the client software may require re-capture.

5. Template generation. In a number of cases, fingerprints, faces and/or irises will be matched locally. Such cases include operator and supervisory override and local de-duplication. The client software will need to generate template locally.

6. Compression and format conversion. The image may have to be converted from one format to another (example, BMP to .PNG) or may have to be compressed/decompressed (WSQ or JPEG 2000) prior to storage.

7. Identification (1:N_{few}). To reduce fraud and prevent unintentional errors, the client software will perform 1:N_{few} identification. A typical case of such identification is to ensure that the same person does not return to the same enrolment station within a short period of time. This includes fingerprint, face and iris. Another scenario pertains to supervisor override during which the supervisor's fingerprint will be captured and verified. In such cases N is expected to be of the order of a few thousands.

One or more SDK libraries will be used to support enrolment client requirements.

4.1.4 Adjudication and exception handling

In the event of a duplicate determination during enrolment, or in small number of cases when the biometric solution is not able to make a clear "duplicate/no duplicate" decision, images and enrollment data will be sent for manual check. The Adjudication workstation is part of the UID application and is outside the scope of current RFP. However, the

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workstation needs certain biometric functions that are provided by the SDK. The workstation will need access to the functions described in Clause 4.1.3.

4.1.5 System Monitoring & Analysis

The system monitoring and analysis modules of UID application require information from the enrolment and authentication system to perform the following:

1. Monitor comparison score distributions
2. Monitor quality of the input data
3. Compare performance and analyze de-duplication risk across parallel ABIS systems.
4. Metrics helpful in analysis of possible enrolment/verification fraud and system intrusion

BSP is expected to assist ASDMSA and MSP to design and implement above functionality and do troubleshooting and resolution of issues.

4.2 Biometric Components

BSP is required to provide ABIS including but not limited to middleware, reference database and fusion algorithms as per requirements indicated in clause 6.2.

BSP shall also provide a separate multi-modal SDK for:

1. Authentication
2. Enrolment client
3. Adjudication and
4. System Monitoring and Analysis

Please refer to clauses 6.2 and 6.3 for more details on ABIS and Multimodal SDK respectively

4.2.1 Automated Biometric Identification System (ABIS)

ABIS used in the Enrolment Server and Authentication Server should provide de-duplication and verification functions. It should communicate with the UID System through the UID Biometric API. As per API specifications, ABIS provides the following functions

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Management	Enrolment	Authentication
Shutdown	Insert	Verify
Clear	Identify	Ping
Ping	Delete	
GetPendingRequests	Ping	
GetReferenceCount		

Each ABIS shall maintain its own database of indexed biometric references (called the reference database) as well as a synchronized disaster recovery database at a separate physical location. This reference database is separate from UID database that is outside of ABIS and not accessible to ABIS. All information necessary for ABIS to perform its functions is maintained by ABIS in the reference database.

ABIS is expected to use both fingerprint and iris for de-duplication. The BSP may choose to use face photo[1] for de-duplication within the ABIS as well.

CLEAR and SHUTDOWN methods have additional level security and can be sent to the ABIS by the UID application only after careful validation of the authorizations of the requesting party.

4.2.2 Multimodal SDK:

The SDK is a set of libraries that provide following functions and should be provided and kept updated with patches and upgrades.

4.2.2.1 Fingerprint

1. Slap Segmentation / Sequence Check
2. Quality check with actionable feedback
3. Image compression/de-compression
4. Feature extraction & Template Generation
5. Identification (1:N_{few})
6. Verification (1:1)

[1] While the objective is to capture face photo per ICAO standard, there is no assurance that consistency could be maintained due to diverse capture conditions.

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4.2.2.2 Iris

1. Quality check with actionable feedback
2. Segmentation/cropping
3. Image compression/de-compression
4. Feature extraction & template generation
5. Identification (1:N_{few})
6. Verification (1:1)

4.2.2.3 Face Photo

1. Automatic capture
2. Quality check with actionable feedback
3. Image enhancement (cropping and rotation)
4. Image compression/de-compression
5. Feature extraction & template generation
6. Identification (1:N_{few})
7. Verification (1:1)

Although automated face recognition is optional within the ABIS, this capability will be required of SDKs for various applications, such as Adjudication and exception handling.

BSP shall supply the UIDAI with a perpetual, fully paid-up, enterprise/world Server and Desktop license to use the BSP's proprietary Multimodal SDK for use within the applications developed by UIDAI or by its authorized contractors/subcontractors for the purpose of the UID Program. As provided in L-1 Identity Solutions Operating Company's licensing policy in its Technical Bid, the Purchaser (including its authorized contractors/subcontractors) are permitted to: (a) make and install copies of the Multimodal SDK software on Purchaser owned or controlled server and desktop computer system hardware (the "System" or "Systems") located at UIDAI owned or controlled facilities; (b) use the Multimodal SDK software and related documentation for the Purchaser's own internal use in developing 1:1 and 1:few custom solution applications (the "UIDAI Custom Applications") containing Multimodal SDK software components in furtherance of the UID Program; (c) use the UIDAI Custom Applications solely in furtherance of the UID Program; (d) publicly demonstrate the UIDAI Custom Applications on Systems; and (e) make and deploy copies of the UIDAI

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Custom Applications to government and non-government entities and grant such parties a limited sublicense to use the UIDAI Custom Applications solely in furtherance of the UID Program. The Purchaser will require its authorized contractors/subcontracts that support the Purchaser with developing applications from the Multimodal SDK to execute confidentiality agreements that protect the confidential nature of L-1 Identity Solutions Operating Company's proprietary Multimodal SDK.

4.2.2.4 SDK API (planned)

In the first release of UID Application, SDK will be invoked using its native API. A service oriented vendor independent API for SDK is planned to be released in July 2010. The vendor will be required to provide update to the SDK compliant with the SDK API after the release of the API.

5 Guiding Factors for the Biometric Solution

Various UIDAI administrative policies will impact the design and operation of both the ABIS and the enrolment stations. In this section we enumerate the current policies.

1. Generally identification function can rely on the sequence of the fingerprint and eyes. However in the case that there are missing fingers, extra fingers; hand abnormalities or when the confidence of the segmentation is low, the identification should not rely on the sequence of the fingers.
2. Iris images will be automatically labeled by the capture device as left or right and therefore this label may be used to restrict iris searches for de-duplication.
3. The ABIS system should not restrict the search on the basis of demographics (gender, age, location) initially, but this capability should be preserved for potential insertion at a later stage in the program.
4. With regard to slap fingerprints, search outcome should not be impacted by inversion of thumb placement.
5. Face photo image enhancement at the enrolment stations may include cropping and rotation, but must not include non-reversible gray-level alterations (i.e., pose and illumination normalization).
6. The ABIS system must create a record in the reference database whenever UID Application invokes INSERT method regardless of biometric image quality.

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7. With the growth of the database, UIDAI may require the vendor to enhance or replace algorithm. The ABIS should be structured to allow for replacement, enhancement or insertion of new algorithm.
8. De-duplication flow over multiple modality can be chosen by the vendor. However, UIDAI may upon review of results, may require that vendor must perform de-duplication on both modalities fully.
9. Authorizations for all requests will be verified at the UID application level. Therefore, all requests sent by the UID application to the ABIS can be assumed to be from an authorized source.

6 Minimum Requirements of Solution

6.1 System Architecture Requirements

6.1.1 Scalability

Dynamic or rule based ability to scale the system within servers, across servers without inherent bottlenecks and code changes. Ability to scale across data centers.

- The system shall have ability to scale dynamically within a server depending upon the load.
- The system shall have ability to add nodes dynamically without bringing the system down.
- The system shall have ability to utilize dynamically increased CPU, RAM and storage.
- The system shall have ability to utilize network bandwidth provided through multiple interfaces.
- The system shall have ability to load balance across servers
- The system should not have a single point of failure and inherent design bottlenecks that stops it from scaling.

6.1.2 Security

Ability to secure all data from thefts, tampering, unwanted modifications, network attacks, and other security threats using physical and logical measures as per UIDAI specified security and data protection policies.

The solution shall support:

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- storing primary data in encrypted fashion
- profile based encryption schemes
- secure communication protocols while communicating with external components
- Communication with only the UID application.
- only authorized users to access appropriate data
- changing the encryption schemes dynamically periodically
- integration with external security components
- configuring Access Control Lists
- running services without super user privileges
- Auditing all access and modifications (by any user) to biometric data and make these audit trails available. Audit trail should be stored

6.1.3 Interoperability

Ability to interoperate with other systems/services within and across any open interfaces and ability to continually re-factor and/or replace specific components without affecting rest of the system.

The solution shall support: -

- the open standard protocol based communication
- command line based interface for interaction
- re-factor/replace individual services without bringing the whole system down.
- all APIs and interfaces defined by UIDAI as part of biometric vendor integration specifications.
- automated integration from external management products such as systems management, network management, and other tools

6.1.4 Manageability

Ability to manage end-to-end solution and its components to ensure solution health and SLAs using external data center management tools.

The solution shall support:

- monitoring of its services using management tools
- ability to bring its services up and down
- monitoring its CPU/network/storage utilization
- monitoring the response time of individual services
- maintenance of its services without affecting client access
- continuous availability of its services even during regular management activities

6.1.5 Availability

Ability of the solution to be up and running over long periods of time and ensure continuous availability.

The solution shall support:

- high availability of its services across servers and DC
- integration with technologies that provide application high availability
- integration with technologies that provide data replication to have data high availability
- continuous availability of its services even during regular management activities

6.1.6 Upgradeability

Ability to seamlessly upgrade services, components, and modules without affecting services and open interfaces. Ability to upgrade without bringing down the solution.

The solution shall support:

- upgrade of individual modules without bringing the solution down.
- backward compatibility
- upgrading using third party software delivery systems
- reverting back to original configuration in case of an upgrade failure
- reverting back to old configuration after a successful upgrade

6.1.7 Installation and Configuration

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Ability to configure the solution using wizard and other end user tools. Ability to install the solution using install script.

The solution shall support:

- integration with change management system
- integration with software delivery systems
- installation and configuration without super user privileges

6.1.8 Maintainability

The solution shall have the:

- Ability to continuously maintain, enhance, re-factor solution without breaking other parts.
- Ability to support maintenance, enhancement and refactoring the solution without breaking other parts

6.1.9 Open Standards Based

Technology choices should be based on open standards and widely adopted frameworks as long as they meet the needs of the system.

The solution shall have:

- technologies that are based on open standards
- frameworks that are widely adopted

6.1.10 Cloud Enabled

Technologies that support deployment on a virtualized platform.

The solution should support:

- The ability to deploy and run the application within a private cloud platform to take advantage of next generation cloud features.
- running services in virtualized environments
- metering of CPU, network and storage utilization

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- throttling of CPU, network and storage utilization
- multi client capable services

6.1.11 Administration

Ability to administer the ABIS during its operation.

The solution should support:

- ability to administer the solution with minimal user intervention with well defined user interfaces and access policies
- easy to use operator interface
- command line for all administrative operations
- role based administration
- automation of administrative tasks

6.1.12 Logging and Reporting

Ability to log and report at a sub-system level state, health of the solution. It shall also log different events encountered by the subsystem.

The solution shall have:

- The ability to log and create reports to know the current state of the solution and improve the quality of different services offered by the solution
- a mechanism to configure the logging level for different modules
- a mechanism to rotate the logs based on polices
- a mechanism to search through the logs with different filters
- a mechanism to integrate with alert management tools
- a mechanism to generate reports on various performance indicators
- a mechanism to integrate with external reporting tools

6.1.13 Storage Access

Ability to use heterogeneous storage environments.

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Unique Identification Authority of India
Planning Commission, Government of India
Copyright Office, New Delhi

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The solution should:

- work in heterogeneous storage environments with data partitioned across servers
- function with storage getting provisioned using heterogeneous storage technologies like NAS/SAN/DAS
- access only the data to which it was given access
- support data partitioned across different servers

6.1.14 Backup/Restore

Ability to provide backup and restore of the persistent data

Solution should have:

- capability to backup and restore the data generated in the solution
 - ability to backup of the data generated in the solution while continuing to process service requests.
 - allowance for incremental/differential/full backup methods
 - ability to take backup of application consistent data
 - proper functioning after a restore operation

6.2 ABIS

6.2.1 Functional requirements

ABIS will provide the following functions

6.2.1.1 Enrolment Related

1. Insert: This function is used to insert biometric data (templates) into the reference database without performing biometric matching. Obtain the biometric and demographic data for the supplied ID, process the biometric samples as required by the biometric solution and store [templates] in a reference database. The function will internally invoke segmentation, feature extraction and template generation.
2. Identify: This function is used to perform de-duplication and identification (in case of lost UID of an enrolled person) across entire or sub-set of the database. It compares the

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query data for the supplied index against the entire reference database, sub-set of the database, a set of supplied indices or a single supplied index. Incoming query data samples always consist of images, possibly cropped and losslessly compressed. The function returns a candidate list of transaction numbers of potential duplicates above a threshold and associated comparison scores scaled on the interval [0,100] with 0 being the measure of least similarity.

3. Delete: This function is used to remove an ID from the reference database. The removal need could arise for variety of reasons.

Updating biometric data in the reference database will be accomplished by inserting a new record. On rare occasion, the ABIS will be subsequently directed by the UID application to delete an existing record in connection with the update operation.

6.2.1.2 Management related

Management related functions will be at two levels of security and allow the ABIS component to be managed using programming interface. On the higher security level, the key required functions include

1. Shutdown. The ABIS component is required to shut itself down.
2. Clear. The ABIS component is required to delete all the data from its reference database and clear all queues.
3. Configure. At the time of initialization, ABIS component is provided with vendor specific information to configure itself. The information will include operating characteristic.

Pinging the system is at the lower security level. Additional functions required for system management, configuration, logging and reporting should be provided under the appropriate requirements. They are not part of the API at this time but accessible through the system management console.

6.2.1.3 Verification related

1. Verify. Verify is a special case of Identify mentioned above where only 1:1 comparisons are performed. The ABIS is sent a query consisting of a fingerprint or iris image or a 19794-2 compliant fingerprint template, and the index number of the enrolment record to which the query is to be compared. A scaled comparison score and a "match/non-match" decision is always returned. Fingerprint verification utilizing 19794-2-compliant templates will be done without use of proprietary extended data.

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6.2.2 Data storage requirement

Persistent data including the reference database may be stored in industry standard RDBMS or in file system. In both cases, the vendor should provide export tools to allow access to the data in situations including but not limited change of vendor, database synchronization, backup, upgrade or maintenance. The exported data should be in industry standard format readable using open source tools.

ABIS should have necessary backup and restore functions for routine system administration.

A copy of the reference database will be stored in a industry standard database or file system existing at a separate location. Therefore BSP shall provide all necessary assistance for the same.

6.2.3 Logging and monitoring

Capability to log transactions at the component interface level, should be implemented such that it allows dynamic starting and stopping of this transaction logging service. The level of logging should be controllable using a configuration parameter.

The audit system should be centrally managed and should be secured against tampering. The system should be able to capture before and after values from transaction logs, privileged user audits, raise alerts on suspicious activity. It should provide security facilities for role segregation within audit organization in terms of administrator, auditor etc. These audit logs should be kept per the retention policy of the UID application. Until UID's retention policy is published, BSP will retain all logs as specified in indicative list below.

Audit and logging system should be scalable and should have the space to grow. The system should be flexible to accommodate new audit requirements in the future.

6.2.3.1 ABIS Log

- Template generation Time
- Total time taken for multi modal matching process (in seconds),
- Matching algorithm throughput,
- Matching scores of each matcher including Fusion and the decision.
- Percentage of automated identification vs. manual intervention rate

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- Above parameters should be recorded along with Registrar information, Geographical information, time of access, and the vendor name performing the matching.
- System availability reports
- System usage reports (CPU usage, memory usage, IO usage)

6.2.3.2 Verification Log

- Verification Transaction Time
- System availability reports
- System usage reports (CPU usage, memory usage, IO usage)

6.2.3.3 Management Functions Log

- Information on user (operator/manager/supervisor/auditor) roles and/or privileges, including creation/deletion of users and changes to roles.
- Changes to database records, including deletion of records
- Periodic (such as hourly) statistics on various databases including size
- Access log (including physical access of biometric servers)
- Activity log
- Change log
- Error log
- Denial of access
- Audit log

6.2.4 Availability Requirements

Application uptime for ABIS should comply with SLA stated in Annexure C – Service Level Agreements

The application uptime is calculated by excluding downtime incurred due to hardware, system software or other infrastructure unavailability.

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6.2.5 Security Requirements

All persistent personal information data will be encrypted.

Encryption password or user name/password should be required for data access.

ABIS will not have access and should not try to access any network resources except the resources referenced by the URLs provided through the API.

All backup data shall be stored in encrypted format using a key(s) available to the UIDAI.

6.2.6 Operator Interface Requirements

All administration and configuration features should be available through graphical UI (in addition to command level access).

6.2.7 Platform requirements

ABIS should be compatible with Linux OS with both 32 and 64 bit support on X86 COTS H/W

6.2.8 Standards

ABIS will comply with most recent applicable ISO standards and Biometric Standards for UID Applications

6.3 Multimodal SDK

The SDK is a set of libraries that provide following functions.

6.3.1 Fingerprint

1. Segmentation. Slap sequence check / segmentation will be used to check if the claimed sequence: right or left slap is correct and also to visualize the segmentation result and use it for the feature extraction. It segments slap image of 2 to 4 fingers into respective digits with associated confidence level of segmentation accuracy. It will allow specification of missing or extra digits.
2. Quality check. The capture quality check will be used to determine if the enrolment software needs to re-capture and provide corrective action; for example finger is misplaced on the scanner. Quality check must be able to provide actionable feedback (e.g., "move finger to the left").



3. Compression/decompression and format conversion: For verification applications, transmission of single fingerprints compressed by WSQ compression will be required, with decompression upon receipt by the verification function. During enrolment, the SDK is required to convert the image format such as from RAW to PNG. The SDK will supply WSQ compression and de-compression algorithms with tunable compression ratio
4. Template generation. The SDK should be able to generate ISO/IEC 19794-2:2005 compliant templates that have been tested to be interoperable with other third party matchers in an independent test.
5. Identification (1:N_{few}). The SDK will be able to compare features extracted from a FP image against a set of reference templates and return a scaled comparison score between [0,100], with 0 indicating least similarity.
6. Verification (1:1). The SDK will be able to compare features extracted from a FP image against a specified reference templates and return a scaled comparison score between [0,100], with 0 indicating least similarity.

6.3.2 Iris

1. Quality check. The capture quality check will be used to determine if the enrolment software needs to re-capture and provide corrective action, for example image is out of focus or has motion blur. Quality check should be able to provide actionable feedback.
2. Segmentation: The SDK will be able to extract KIND_VGA, KIND_CROPPED, and KIND_CROPPED_AND_MASKED from ocular image.
3. Compression/decompression and format conversion: The SDK will be able to convert image from one format to another (for example, BMP to KIND_VGA)
4. Feature/Template generation: The SDK will be able to extract and store a proprietary template from the segmented iris image.
5. Identification (1:N_{few}). The SDK will be able to compare features extracted from a query iris image against a set of reference templates and return a scaled comparison score between [0,100], with 0 indicating least similarity.
6. Verification (1:1): The SDK will be able to compare features extracted from a query iris image against a specified reference template and return a scaled comparison score between [0,100], with 0 indicating least similarity.

6.3.3 Face Photo

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1. Automatic Capture. Automatic capture will analyze video frames from the camera, provide the actionable feedback, and select the best frame.
2. Quality check. The capture quality check will be used to determine if the enrolment software needs to re-capture and provide corrective action.
3. Image enhancement. Enhancement such as face cropping will automatically find the face in the photograph and crop/resize the image to an ICAO compliant format. The SDK should not carry out any gray-level manipulations.
4. Feature/Template generation: The SDK will be able to extract and store a proprietary template from the segmented face image.
5. Compression/decompression and format conversion. The SDK will be able to convert image from one format to another (for example, BMP to JPEG 2000) and compress or decompress images.
6. Identification ($1:N_{few}$). The SDK will be able to compare features extracted from a query iris image against a set of reference templates and return a scaled comparison score between [0,100], with 0 indicating least similarity.

7. Verification (1:1). The SDK will be able to compare features extracted from a query face image against a specified reference template and return a scaled comparison score between [0,100], with 0 indicating least similarity.

6.3.4 Standards requirements

All uncompressed images should be as per UID standards (e.g., PNG).

All compressed images should be as per UID standards (e.g. WSQ or JPEG 2000)

6.3.5 Reliability Requirements

The SDK should perform consistent to the specifications, for all possible data in the specified formats. The results should be reproducible on a variety of platforms. The libraries should work without any segmentation violations, memory faults or memory leaks.

6.3.6 Security Requirements

SDKs should be purely computational libraries and should have minimum system dependencies and should not attempt to access any resources such as hardware, files or network.

6.3.7 User Interface Requirements

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SDKs should not have any user interface.

6.3.8 Platform requirements

SDK should support Windows (XP & above) and Linux Os with both 32 and 64 bit support.

7 Load and Performance requirements

Data base size	Peak De-duplication requests	Peak verification requests
20 Crore (200 Million) records	10 Lakh (1 Million) requests/day (in 24 hours)	Fingerprint template: 10 Lakh (1 Million) requests/hour Iris image: 10,000 requests/hour Face photo: 2,000 requests/hour

Metric	De-duplication	Verification
Accuracy	False Positive Identification Rate < 0.1% for database size of 20 Crore. False Negative Identification Rate < 1% for database size of 20 crore.	False Acceptance Rate < 0.01% at False Rejection Rate < 2%.
Response time	No daily backlog	< 0.1 second average for biometric verification using ISO FP template while using SDK[1]. < 0.5 second average for biometric verification using ISO FP template while using ABIS.

SDK matching accuracy rates must meet the FAR and FRR rates required for verification on operational data as given above. The SDK licensing is required for

[1] Using standard COTS hardware specified in clause 8. Maximum of two fingerprint ISO templates to be matched against ten fingerprint ISO templates.

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1. Enrolment stations required to perform 200 crore enrolment over the contract period.
2. Authentication servers required to support peak authentication requests at the specified response time level
3. Adjudication stations required to support FPIR for the enrolment rate mentioned above.
4. System monitoring and analysis servers for ABIS configuration to support 200 crore DB size over the contract period.

8 Server, Storage and Other Infrastructure

8.1 Supply of hardware by Biometric Solution Provider for the first 1 Crore allotted enrolments

Biometric Solution Provider, as a part of this project, shall provide all the hardware of required capacity for de-duplications of the first1 Crore enrolments. The hardware shall include all components, including physical racks, required for performing the required services to meet the performance level expectations as stated in Section III-Attachment-Draft Service Level Agreement. The components of hardware that Biometric Solution Provider should include, but not limited to:

a) Blade Server
b) Blade Chassis
c) SAN (Storage Area Network)

The components should be supplied for deployment of the overall solution at both primary site and BCP site in 1:1 configuration

The minimum expected specifications for the key components that the hardware should comply with are provided in Section VI.b. The Biometric Solution provider shall be responsible for supply, installation and commission of all hardware supplied along with installation and commissioning of the overall solution.

Tier 3 DC environment facility would be made available for the solution. UIDAI shall provide only the datacenter space, power and cooling infrastructure and a standard 10 gbps network switch to connect with the rest of CIDR network in the Datacenter.

The hardware components to be provided by Biometric Solution Provider should adhere to following:

1. Should be compatible with all required interfacing devices and appliances in the datacenter

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2. Specifications should allow UIDAI to scale up the infrastructure to 20 Crore enrolments and beyond

3. Should be able to interconnect and interoperate with all required interfacing devices and appliances in the datacenter

4. Should comply with the Datacenter standards, policies and procedures laid out by UIDAI

5. Should adhere to BCP strategy laid by UIDAI and should be compatible with industry leading replication technologies and backup application softwares available in the market presently

6. Should provide APIs for integration with leading IT infrastructure management solutions and comply with policies of enterprise management

7. Compatible with the Indian standard power ratings.

8. The servers configuration of the servers that Biometric Solution Provider shall supply should have been field tested for at least 3 months at the release of this RFP

9. The OEMs of Servers proposed to be supplied should have been in the business of manufacturing the servers for at least 4 years

In case if any of the component does not comply with the UIDAI standards or is not in line with future direction of UIDAI, UIDAI will have the right to ask for replacement from the biometric solution provider and Biometric Solution Provider shall provide the replacement at no additional cost.

Table below provides some of the Datacenter environment constraints that the Biometric Solution Provider should note while finalizing the Hardware Infrastructure to be provided.

Parameter	Value
Preferable Rack Size	42 U / 19 Inch high, 600 mm wide, 1000 mm deep
Allocated power per Rack	7 KVA

The bidder should, as part of the Technical Proposal, provide details on the hardware supplied that shall include the following:

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1. Logical and deployment diagrams with details on number of blades per chassis, chassis per rack, power and cooling requirements, connectivity for n/w and storage.
2. Specifications of blade servers, blade chassis and Storage to be provided by provided responses in Section VI.b
3. Bill of Quantity of all components and peripheral devices in terms of quantity and specifications without the mention of any prices as per Annexe 4.4.3 in Section IV
4. Storage requirement for backup
5. Details on Warranty period and Annual Maintenance from the hardware OEM for each of the component

The payment for hardware supplied by the Biometric Solution Provider shall be a fixed amount as per the payment terms stated in Section III – General Conditions of Contract

Provision of System and Other Softwares:

As part of overall Solution to be installed, configured and maintained, Biometric Solution Provider shall also factor the required systems softwares that shall include, but not limited to, the softwares indicated in Section VI.c.

All softwares proposed shall be considered as a part of the black box ABIS solution and the associated cost shall be factored as part of De-duplication services cost as mentioned in Clause 25 of Section II.

8.2 Supply of hardware by UIDAI after first 1 Crore allotted enrolments

As stated above, Biometric Solution Provider shall supply the required hardware for the capacity of first 1 Crore enrolments. For enrolments after the first 1 Crore enrolments, UIDAI or UIDAI nominated agency shall provide the Blade Servers or equivalent computing power and Storage across the 3 bands of enrolment volumes and in quantity as per the schedule provided below

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Enrolment Transactions	Quantity of Blade Server or equivalent computing power (Number of Units)	Storage Capacity (in TB)
From first 1 Crore allotted enrolments transactions to 5 Crore allotted enrollment transactions	Up to 20 Blade Servers or equivalent computing power	Up to 10 TB
From first 5 Crore allotted enrolments transactions to 10 Crore allotted enrollment transactions	Up to 80 Blade Servers or equivalent computing power	Up to 50 TB
From first 10 Crore allotted enrolments transactions to 20 Crore allotted enrollment transactions	Up to 200 Blade Servers or equivalent computing power	Up to 100 TB

The Biometric Solution Provider shall raise the request of additional servers and/or storage at least 3 months in advance for UIDAI or the nominated agency to provision for the same.

In case if the Biometric Solution Provider's requirement for server and storage during any of the 3 bands exceeds the maximum quantity provisioned by UIDAI, the Biometric Solution Provider shall compensate UIDAI on the cost for the additional hardware to be procured from its hardware supplier agency along with the associated costs on power, cooling, datacenter space and maintenance charges.

On the other hand, additional incentives for using less than prescribed hardware in each band above, for meeting the required number of allotted transactions, shall be provided to the Biometric Solution Provider. The plan for incentive shall be formulated by UIDAI keeping in view of reducing the overall cost.

9 STATEMENT OF WORK

Please refer to Clause 12 Project Plan & Timelines to gain an understanding on how the implementation is envisaged to be carried out.

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9.1 Project initiation

Within 7 Calendar days of award of contract, the BSP is required to do the following:

a. Mobilize the team for the project. The BSP shall deploy personnel including the Key Personnel as mentioned in the Clause 11 Constitution of Team.

b. Initiate the supply of all required hardware and storage infrastructure, including but not limited to, servers and storage as required to support 1 Crore enrolment as per the minimum requirements stated in Section VI.b. The BSP shall bring all the required hardware as required to support 1 Crore enrolment.

c. Conduct a kick-off meeting with UIDAI with participation from key personnel proposed for the project to discuss the project plan for way forward

d. Submit a plan for procurement, transportation, installation and commissioning of hardware in UIDAI's data centers both Primary and BCP sites located in Delhi and Bengaluru respectively. The BSP shall adhere to environment specifications of these sites and adhere to the BCP plan. There shall be Zero data loss while switching from Primary to BCP site maintained as active-passive with 1:1 capacity.

e. Co-ordinate with Data Center service provider and prepare a blue print for deployment of hardware, ensure availability of power and other environmental facilities in the datacenter

f. Set up the required Test and Production environment s for the rollout of PoC. The hardware used for Solution Demonstration exercise as part of the RFP evaluation process could be used for the rollout of PoC, if found adequate to meet the requirements based on expected enrolment transactions.

g. Begin to supply SDK perpetual licenses of the proposed multimodal SDK to cater to requirements as stated in Clause 4. Biometric Solution Components

h. Support ASDMSA in developing the client enrolment software through provisioning licensing, training and services. SDK licenses must not use hardware license key or keyed to ID (such as CPU, serial number, Ethernet ID).

9.2 Implementation of Solution as Proof of Concept (PoC)

As stated in Clause 12 Project Plan & Timelines, the BSP shall deploy the solution in the form of Proof of Concept (PoC) that shall cater to the early enrolments of the residents.

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The solution in PoC should cater to early volumes of enrolment. The solution in PoC shall at minimum provide:

a. Integration of ABIS component with UID application at server side

b. Integration of Multimodal SDK with Enrolment Client application

c. Configuration of business rule and application level policies related to de-duplication and verification as stated by UIDAI

d. Perform de-duplication checks (1:N) for enrolment subjects on a reference database up to 10 lakhs

e. Perform biometric verifications (1:1) using the ABIS component for at least up to 10,000 verifications per day. The full scale solution as detailed in **Clause 4** Biometric Solution Components shall be using Multimodal SDK for the verification services

The BSP shall rollout the solution after a review and testing of the same UIDAI. The BSP shall be responsible for application availability while in production and shall deploy the solution at both Primary and BCP sites and adhere to BCP plan including data backup and recovery

Continuous performance monitoring and improvement of the solution in terms of accuracy, throughput and optimum resource usage shall be undertaken by the BSP. The learnings shall be used towards configuration of the Solution

The SLAs as stated in Draft Service Level Agreement of the RFP shall not be applicable for the solution when in PoC.

The solution shall be in PoC until the go-live of the full scale solution. The BSP shall be responsible for transition from PoC to full scale solution without any data loss and minimal disruption of operations.

9.3 Installation, Configuration and Commissioning of the full scale Solution

9.3.1 Installation and Commissioning for all Servers

The BSP along with UIDAI, and datacenter service provider should undertake pre-installation planning at Primary and BCP sites including but not limited to Rack planning, structured cabling, power points, check on utility services, environmental conditions, etc.

Delivery, Installation and commissioning of the hardware servers and related equipment in the Datacenter Space provisioned by UIDAI at their Primary and BCP sites.

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The plan and layout design for the placement of equipment in the provisioned datacenter is required to be carried out by the BSP. The BSP should provide an elevation plan for each of the Primary and BCP datacenter for housing of the servers and other equipment.

The plan and layout design shall be developed in a manner so as to optimally and efficiently use the resources and facilities available or being provisioned at the respective datacenters viz. space, racks, power, air-conditioning, cabling, etc.

The BSP should co-ordinate with the datacenter provider of UIDAI in order to prepare the plan and develop the layout design.

The plan and design documents thus developed shall be submitted to UIDAI or its nominated agency for approval and the acceptance should be obtained prior to commencement of installation.

Carry out installation of equipment in accordance with plans and layout design as approved by the UIDAI

Installation and configuration of the software including, but not limited to, Operating System (OS), System software, etc. on the servers would be responsibility of the BSP. The BSP should also tune parameters for optimal performance of the OS should be carried out.

Undertake necessary changes to harden the OS to prevent against malicious and unwarranted attacks.

The BSP will install all necessary software infrastructure and middleware including Database, Application Server software, and tune appropriate parameters in this software to ensure optimal performance should also be undertaken.

9.3.2 Storage Installation and Configuration

The BSP should undertake study of the application environment in order to plan for an integrated storage infrastructure based on SAN. The zoning, LUN and volume creation should be decided based on the characteristics of the application.

Develop an implementation plan, installation and configuration of the SAN array to implement the overall solution.

The deployment of the disk storage shall consists of tasks, including, but not limited to, installation and configuration of SAN design, creation and configuration volumes, LUN, RAID storage sets, assisting in migration of data, if any and undertake tuning exercise to optimize performance of the solution.

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9.3.3 Setting up of Testing, and Production Environments

BSPs shall set up Test and Production environments. The environments are to be established to serve various purposes along the biometrics solution lifecycle. The following section describes each of these environments.

The BSP shall undertake setting up of infrastructure related to propose solution by verifying the infrastructure being deployed, installed and commissioned and verify the entire setup once before activating the environment. The BSP shall also periodically verify the adequacy of the environments during operations after the setup and notify UIDAI on the any issues requiring action.

9.3.3.1 Production Environment

Production environment shall compose of racks containing servers, storage, communications equipment, security devices as required for by the proposed Biometric Solutions. The production environment shall be common for the entire CIDR infrastructure used in production that includes infrastructure from other BSPs.

9.3.4 Configuration and Integration of the Solution

The BSP shall use all the learnings from the Proof of Concept (PoC) towards configuring the solution to meet the performance and load requirements during the contract period.

The BSP shall undertake the following as part of Solution configuration

a. Configure the solution to comply with the UIDAI policies and other business rule and application level policies as stated and finalized by UIDAI

b. To configure / tune the ABIS solution and underlying algorithms in order to meet the performance requirements as stated in Attachment 1 – Service Level Requirements considering the expected increase in enrolments and growth of the reference database

c. Configuration of ABIS solution's own internal persistence/database component with adequate back- up and recovery in compliance with UIDAI BCP plan and data backup and recovery strategy.

d. Integration of ABIS component with UID application at server side

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e. Assist UIDAI and ASDMA with integration of Multimodal SDK libraries with UID application modules related to verification. The Multimodal SDK (server license component) shall be used for Biometric verification (1:1).

f. Assist UIDAI and ASDMA undertake Integration of Multimodal SDK with Enrolment Client application, adjudication and monitoring module.

g. Provide training to UIDAI and ASMDA undertake integration of the ABIS and Multimodal SDK with UID application

h. Submit documentation of key configuration settings, business rules and policies adopted along with key design and solution features along with user manuals to UIDAI for their review and acceptance.

9.3.5 Testing

Under the Testing stage, BSP shall carryout Integration Planning & Testing (within the solution across modules and third party algorithms and also the external integration with APIs provided by UIDAI) as well as System Test Planning & Testing phases. The following sections explain the scope of each phase BSP is expected to perform.

Integration Planning & Testing

BSP shall identify the critical modules to be integrated, identify order of integration and identify interfaces to be tested.

Along with planning for system integration, BSP shall develop integration test cases and include these in integration test plan and submit the same for review to UIDAI

BSP shall undertake the actual integration activity as per the integration test plan. Subsequently, integration testing shall be carried out as per the plan, log all defects found and shall ensure these defects are rectified and re-tested.

Testing stage shall include testing of the integration of the proposed solution components (Server side ABIS and Client slide SDK) with respective APIs provided by UIDAI.

The BSP shall be jointly responsible with ASDMA in integration and end to end testing of each integration interface at client and server side applications

BSP shall maintain the integration test plan along with test results & defect statistics and provide the same to UIDAI, if desired so.

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BSP submit report on integration for third party audit

System Test Planning & Testing

BSP shall plan out a series of different tests, each test having a different purpose, to verify that all system elements have been properly integrated and that the system performs all its functions and satisfies all its non-functional requirements.

The inputs for this phase consist of the requirement specification document (SRS) and the initial system test plans where as the outputs consist of system test plan and test results.

As part of system test planning, BSP shall identify features that shall be tested and features that need not be tested.

On successful completion of the Integration testing, BSP shall carry out the actual system testing as per the system test plan.

BSP shall ensure that system testing is carried out by an independent team other than the development team. BSP shall setup a separate test environment with test database to carry out system testing.

As part of the system testing, BSP shall carry out Performance testing of the application to ensure that the application meets the performance requirements.

BSP shall maintain the system test plan and test results with defect statistics and provide the same to UIDAI.

BSP shall submit a report on testing to UIDAI for review

Stakeholder testing (User Acceptance Testing)

Stakeholder testing consists of formal testing conducted by the user group according to the test plan and analysis of the test results to determine whether the system satisfies its acceptance criteria.

i. BSP shall prepare a plan to coordinate the User testing activity.

ii. BSP shall prepare a software release note that contains stepwise instructions for UIDAI on how to install the software. The instructions shall include information on creating the directory structures, installing source and executables, loading data needed for installation and so on.

iii. The primary responsibility for acceptance testing lies with the user group and UIDAI shall coordinate with BSP to ensure necessary support is available to the user group.

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iv. End user/testing group shall document the test cases / scenarios to ensure that the defined acceptance criteria are validated during the testing.

v. The test cases prepared by third party shall be approved and used by UIDAI for the purpose of testing

vi. BSP shall provide support to document the User Test Results along with Defects Statistics. BSP shall ensure that defects found are corrected and is retested by the end user group.

vii. The testing shall be taken in iterations till the specified requirements are met

viii. Test results shall be audited by a third party

ix. On successful completion of User Testing, BSP shall obtain a formal sign-off from UIDAI for solution go-live.

9.4 Go-live of Solution

BSP, in coordination with UIDAI, shall prepare setting up the production environment, installation of the application in the production environment.

BSP shall rollout the application. BSP shall coordinate with UIDAI to resolve any problems encountered after rollout. All post implementation issues shall be documented and the necessary fixes / resolutions shall be implemented by BSP.

BSP shall ensure necessary support is provided to resolve defects. BSP shall document the defects / bugs encountered during this phase as well as document the resolution of the same. BSP shall also prepare and maintain a database of Consolidated List of Common Errors & their Resolution.

9.5 Activation of SLAs

The Biometric Solution Providers shall undertake performance improvement measure for the solution until the solution meets the required Solution related performance service levels as stated in Attachment 1- Draft Service Level Agreement. After a period of 8 (eight) weeks after go-live or on completion of 1 Crore enrolments, whichever is earlier, the Solution shall be required to comply with the Service Level Agreements. The BSP shall be required to submit an undertaking to UIDAI on formally complying with the SLAs in order for the solution to be finally accepted for future allocation of transactions. Formal compliance to SLA is perquisite for the BSP to be considered for dynamic allocation of enrolment

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volumes. Please refer to **Annexure D – Work Allocation and Service Level** for more details on dynamic allocation of transactions across multiple BSPs selected through this RFP.

9.6 Requirements Change Management (Pre-implementation)

UIDAI expects upgrades to occur during the contract period. If there are changes in requirements during the contract period post go-live, BSP in consultation with UIDAI is expected to define a formal process to manage the requirements changes as defined for illustration below:

BSP shall maintain a change request log to keep track of the change requests. Each entry in the log shall contain a Change Request Number, a brief description of the change, the effect of the change, the status of the change request, and the key dates.

BSP shall assess the effect of the change by performing impact analysis.

BSP shall maintain the change request log with updated information and provide the same to UIDAI as and when desired.

9.7 Operations and Ongoing maintenance

9.7.1 Support and Maintenance of Application

The objective of post implementation application maintenance is to provide application maintenance and support services, including request based services (problem requests/defect fixes), enhancements, configuration management and post release support. As part of these services, BSP should provide support for upgrade, bug fixes, enhancements, operational support, and assistance to the stakeholders.

Full-time support of programmers shall be provided to UIDAI after Acceptance of System for the contract period. The Programmer deployed at UIDAI should be able to handle any change in the application as requested by UIDAI. Vendor should propose the nature and quantity of the support.

The services include:

Bug-fixes and end-user problem resolution:

The stakeholder support would include all activities related to resolving the bugs / defects reported by the users. Every bug / defect should be logged. Every bug / defect should be categorized on the severity levels. BSP should identify the solution and take necessary approvals from the stakeholders and release the patch for User Acceptance Testing (UAT) after fixing the defects. BSP should document defects / bugs encountered as well as document the resolution of the same.

New development and enhancements

UIDAI intends to upgrade the version of the application during the contract period. If there are changes in requirements during the contract period post go-live, BSP in consultation with UIDAI is expected to define a formal process to manage the requirements changes as defined for illustration below:

BSP shall be responsible to initiate the change requests suggested by stakeholders, assess the need to implement the suggested changes, take necessary approvals to implement the suggested changes. UIDAI will forward the approved change requests to BSP.

BSP shall maintain a change request log to keep track of the change requests. Each entry in the log shall contain a Change Request Number, a brief description of the change, the effect of the change, the status of the change request, and the key dates.

BSP shall assess the effect of the change by performing impact analysis.

BSP shall maintain the change request log with updated information and provide the same to UIDAI as and when desired.

UIDAI shall be informed of all version upgrades (minor & major), patches, releases and enhancements. UIDAI will review the impact of the change and will its own discretion decide if the change should be implemented. The BSP will install, test and configure the changed solution in the test and production environment.

Configuration management and Version Control

With the objective of keeping track of the version updates in the application, BSP should adhere to the configuration management process defined in conjunction with the stakeholders. BSP may be required to assist the stakeholders in ensuring that a copy of the production environment is backed up and stored in the repository before the new / modified components are copied to Production. BSP may be required to assist the stakeholders' personnel in restoring the backed up application versions for testing purpose mainly addressing the restorability of the media.

Test management

Test management procedure should be defined in conjunction with the stakeholders to ensure smooth transition of the application changes from test environment to production environment. As part of the release management BSP should perform the following activities:

BSP should group the related change requests, assess their development progress and accordingly prepare a schedule for their release to production.

BSP should in consultation with the stakeholders prepare a detailed release plan for every release. This plan should include the release number and date of release. It should also contain details about the change request to be released.

9.7.2 Help Desk

A helpdesk is envisaged with a minimum of helpdesk personnel to be provided for the resolution of technical queries by internal users. Typical helpdesk activities shall include:

- Deployment of sufficient manpower to attend the helpdesk requests for extending technical support on solution

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- Provide Help Desk facility for agreed SLAs for reporting technical incidents / issues / problems with the system. Help desk facility shall be provided through a dedicated phone number
- Track each incident / call to resolution.
- Escalate the calls, to the appropriate levels, if necessary as per the escalation matrix agreed upon and developed by BSP and UIDAI.
- Coordinate with respective OEM for closure of calls.
- Analyze the incident / call statistics and provide monthly reports including but not limited to:
 - Type of incidents / calls logged
 - Incidents / calls resolved
 - Incidents / calls open.

9.7.3 Warranty and Annual Maintenance Contract (AMC) Administration

BSP should ensure availability of Warranty and Annual Maintenance Contract (AMC) support with all the OEMs for proposed software components including biometrics algorithms proposed. This Warranty and AMC support period should coincide with the entire duration of the contract. BSP should track the Warranty and AMC for all the assets at the UIDAI offices, third party locations and DC/DR sites and initiate procedure for renewal of the same at appropriate points in time.

9.7.4 MIS Reports and Incident Reporting

The following is an indicative list of MIS reports to be submitted by the BSP post go-live. The selected BSP shall also draw an exhaustive list of reports along with UIDAI. BSP shall submit the reports on a regular basis in a mutually decided format. BSP shall submit 2 hard copies and 1 soft copy of each of the reports.

1. Log of preventive / break-fix maintenance undertaken.
2. Summary of changes undertaken in all the datacenters including major changes like configuration changes, release of patches, database reorganization, storage reorganization, etc. and minor changes like log truncation, volume expansion, user creation, user password reset, etc.
3. Consolidated SLA Report

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4. Summary of incidents reported like Application down, Components down, overall downtime, security vulnerabilities detected, hacker attacks / security threats, peaking of utilization, etc
5. Bug / defect resolution reports including the analysis of bugs / defects resolved, pending, completion time, responsiveness, concern areas, etc.
6. Change Request Logs with their resolution status
7. Incident Reporting (as and when it occurs)
 - Complete system down – with root cause analysis
 - Peaking of resource utilization on any component
 - Bottlenecks observed in the system and the possible solutions and workarounds.
8. Security Incident Reporting (as and when it occurs)
 - Detection of security vulnerability detection with the available solutions / workarounds for fixing.
 - Hacker attacks, Virus attacks, unauthorized access, security threats, etc. – with root cause analysis and plan to fix the problems.

9.8 Technical Reports

9.8.1 ABIS Reports

ABIS reports will include technical data mentioned in Sections 6.1 and 6.2.4. UIDAI and BSP will jointly determine frequency and content of the reports. The report will include accuracy reports (FMR, FNMR, FPIR, FNIR).

9.8.2 Data Quality Monitoring & Reporting

The quality of captured data is related with accuracy of matching. It is therefore very important that the BSP should continuously monitor the data quality and publish reports, generate exceptions in case quality going below the threshold. Data quality monitoring is complementary to benchmarking, and helps to analyze and correct the problems with the capture process. The primary objective is to identify the sources of the quality problems and to implement the corrective actions. The functionality will be implemented in the analytics module using the functionality provided by Biometric SDKs.

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. It is assumed that the

- Data quality of capture would be received with the image. Image would be received in raw form.
- Original captured images may be appropriately compressed using published loss-less compression algorithm for optimization of storage and transmission. The Compression will not alter the quality of image.

In summary, the BSP should provision for following scope of work related with Data quality monitoring and reporting:

- The BSP should centrally administer Image level quality checks and thresholds
- The BSP should implement a process which generates automated exception, if despite best efforts image captures do not meet quality standards. The BSP should design and implement mechanism which would provide direct feedback of quality and capture related shortfalls to registrars
- The BSP should implement a process which implements Image enhancements techniques to enhance biometric feature extraction to acceptable levels.
- The BSP should implement a process for achieving consistency across capture devices and, in the case of iris, distance from camera and lighting conditions, by applying variable image enhancement based on known issues of a specific device.
- The BSP would present the statistical data to UIDAI authority on monthly basis. This will help UIDAI to take a decision, in case threshold value needs to be adjusted based on inputs from field.
- The BSP should implement a mechanism to remote update of threshold value of capturing process in UID data capturing application. The patch should be automatically pushed when capture application connects next to UID data center for data upload.
- The BSP should implement a mechanism for automated detection of fingerprint sequence issues to detect a wrongly indexed finger or repeated finger to cause operator errors leading to fraudulent situations.
- The BSP should implement a mechanism for automated exception marking if despite best efforts image captures do not meet quality standards

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Reporting

- The BSP should perform analysis of captured quality and accuracy of matching on weekly basis.
- The solution being offered by the BSP should have adequate safeguards and validations to ensure that all data relating to an applicant, together with the photograph, biometrics get tagged together and that there is no mix-up of the particulars relating to one applicant with those of others. The system should immediately capture any exception and publish a report on a weekly basis.
- The BSP should report situations where biometric features could not be captured due to various reasons, like old and infirm persons, persons with one or no hands, children, technological limitations, etc. This report should be published on weekly basis
- Weekly reports on capture statistics and quality level analysis based on registrars, location, scanner type

9.9 Training

As part of system implementation, BSP shall impart training, to staff of UIDAI and of service providers as nominated by UIDAI, on the solution related to configuration, usage, API, performance tuning and measurement and Technical reports as indicated in the Terms of Reference. The Training program shall involve both in-class and online training sessions. The BSP shall develop the required training materials. Main tasks include:

a. Estimating timeframe for overall training program

b. Designing Curriculum & develop training materials

d. Delivering classroom training

e. BSP shall training curriculum that shall include at least the list of course as mentioned in the below:

1. ABIS System Configuration and Administration (including backup)
2. SDK Tool Kit – development, Configuration and Integration
3. ABIS quality and accuracy management
4. Input Data Quality Monitoring
5. Performance Measurement

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6. Benchmarking

9.10 Project Management Procedures

The BSP is required to adopt a comprehensive and effective project management methodology together with efficient and reliable tools.

The BSP would prepare a detailed and comprehensive *Project Plan* that shall address at the minimum the following:

- Define an organized set of activities for the project and identify the interdependencies between them.
- Establish and measure resource assignments and responsibilities.
- Construct a project plan schedule with milestones.
- Measure project deadlines, budget figures, and performance objectives.
- The Plan document shall include:
 - Project Organization and Management plan
 - Software Design and customization plan
 - Implementation plan
 - Pre-commissioning, Operational and User Acceptance Testing Plan
 - Design, Delivery and Installation Plan for Servers and Storage
 - Training Plan
 - Resource planning and loading for each phase/activity. This must also indicate where each resource would be based during that phase, i.e., onsite at UIDAI's offices or at the BSP premises.
 - Technical Support Plan
 - Quality Plan with Quality Assurance and Control Process details which must include (but not limited to) detailing on Metrics, Reviews, Problem Reporting and Corrective action etc.
 - Technical and Operational Process which must include (but not limited to) detailing on Methods, Tools, Techniques etc.
 - Contingency Plan document containing emergency response procedures; backup arrangements, procedures, and responsibilities; and post-disaster

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recovery plans, procedures and responsibilities in compliance with the BCP plan of UIDAI

- Communicate the project plan to stakeholders with meaningful reports.
- During the project implementation the BSP shall report to UIDAI, on following items:
 - Results accomplished during the period (fortnightly).
 - Cumulative deviations to date from the schedule as specified in the finalized Project Plan.
 - Corrective actions to be taken to return to planned schedule of progress.
 - Proposed revision to planned schedule provided such revision is necessitated by reasons beyond the control of the BSP.
 - Other issues and outstanding problems, and actions proposed to be taken.
- Progress reports on a fortnightly basis.
- Identify the activities that require the participation of UIDAI and communicate their time requirements and schedule early enough to ensure their full participation at the required time.

The Project plan prepared by the BSP would be reviewed by UIDAI.

The BSP would update and maintain the Project Plan throughout the duration of the engagement. All changes are to be reviewed and approved by UIDAI.

Project Documentation and Manuals

The BSP shall create and maintain all project documents that would be passed on to UIDAI as deliverables as per the agreed project timelines. The documents created by the BSP will be reviewed and approved by the UIDAI. UIDAI would also approve any changes required to these documents during the course of the project.

The project documents include but are not limited to the following:

- Inception Report containing the Detailed project plan
- All Test Plans. Test Cases, Test Input data set and Test Results
- Training and Knowledge Transfer Plans

- Detailed Hardware Specifications and related hardware configuration document
- Roll Out Completion Report
- SLA and Performance Monitoring Plan
- Issue Logs

The BSP shall submit a list of deliverables that they would submit based on the methodology they propose. The BSP shall prepare the formats/templates for each of the deliverables upfront based upon industry standards and the same will be approved by UIDAI prior to its use for deliverables.

All methodology and documentation shall conform to the standards like CMM/CMMi, wherever applicable. All project documents are to be kept up-to-date during the course of the project.

Application Manuals

The BSP would prepare the necessary manuals for ABIS and SDK and training materials including (but not necessarily limited to):

- Technical/Operations manual for applications in English.
- User manuals for application in English.

The BSP shall maintain a log of the internal review of all the deliverables submitted. The logs shall be submitted to UIDAI on request.

All project documentation shall conform to the highest standards of software engineering documentation.

All the manuals and training materials will be provided to UIDAI as two sets of hardcopies and two sets of softcopies on separate CDs.

9.11 Migration of solution to other facility

BSP shall UIDAI and UIDAI nominated third party representatives in transfer of solution and infrastructure to another datacenter facility during the contract period. BSP, on prior notice from UIDAI, shall deploy required personnel to support the migration of the infrastructure and in setting up installation, configuration and commissioning of the solution at the new facility till the time the solution is operating to the expectations of the UIDAI

10 Acceptance of Solution

Acceptance schedules, detailed acceptance tests, formats for acceptance reports and dissemination mechanism for such reports shall be drawn by the BSP in consultation with UIDAI.

The Acceptance of the solution shall be provided by the UIDAI only after the following conditions have been met successfully to the satisfaction of the purchaser.

1. Successful go-live of the Biometric solution to Primary site and to BCP site to the extent necessary for meeting the desired objectives.
2. Successful operation for 30 working days after complete rollout of the system meeting the Services Level Agreement as agreed between UIDAI and BSP at the time of signing of contract.
3. Completion of all the documentation required as part of this RFP and as desired by the purchaser to the satisfaction of the UIDAI.
4. Installation and Configuration of all the components of the solutions including hardware, software, Storage, accessories to the satisfaction of UIDAI at both the sites and successful testing of all components.
5. The Biometric Solution Providers should demonstrate the performance of the application in "live" condition at BCP site to the satisfaction of UIDAI within a timeframe of three months from the date of successful go-live from the Primary site

The following is the indicative acceptance criteria for some of the deliverables and work products

Acceptance criteria for Biometric Solutions

1. Successful testing / re-testing of all the application test cases
2. Adherence to the acceptance test cases developed for each requirement of Biometric Solution Component as stated in Annexure . Minimum Requirements and Technical Particulars
3. Review and acceptance of all the application deliverables including documentation
4. Successful adherence to SLAs on SLA testing/measurement undertaken

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5. Successful execution of the application related training to all identified users
6. Successful go-live and closure of all incidents of the solution

Acceptance criteria for Documented Work Products/ Deliverables

1. Finalization of expected contents of work product with UIDAI prior to submission of draft document
2. Submission of draft document for UIDAI's review after sufficient internal review by the BSP
3. Closure of review comments from UIDAI within the timelines stated
4. Acceptance of revised draft(s) by UIDAI based on adequacy and quality of the final submission

11 CONSTITUTION OF TEAM

The professional staff proposed for this project by the bidder will play a key role in successful rollout of the biometric solution and the following indicative profiles are required to be provided by the bidder. Should any additional profiles be suggested by the bidder, the role of the profile shall be clearly outlined and the Lifecycle Deliverables to which the profile will contribute shall be clearly defined.

The key staff will be organized as follows

Project Organization	Role	Involvement
Project In-charge	Manages the overall project, resources and deliverables. Coordinates with R&D and support organizations of the BSP.	Full time: From signing of contract until 10M enrolment Part time: After 10M
Integration Engineer (2 personnel)	Provides support for integration and develops necessary tools for ABIS and SDK to fully integrate with UID application.	Full time: From signing of contract until acceptance testing of ABIS and SDK (with Verification and monitoring integration)
Biometric Specialist (2 personnel)	Evaluates biometric data, configures biometric	Full time: From signing of contract until acceptance testing

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Project Organization	Role	Involvement
	algorithms, computes performance and accuracy numbers and provides recommendation on optimum configuration of the solution.	Part time: until the solution crosses 10M size
System Performance Specialist	Configures the solution for UIDAI to support requirements. Tunes the system as load and needs changes. Estimates hardware and other infrastructure requirements.	Full time: From signing of contract until acceptance testing Part time: until the solution crosses 10M size
Q&A and Test Engineer	Designs the test and conducts final unit and system testing of the entire solution to meet stated targets	Full time: From the signing of the contract until acceptance

The above organization does not show personnel required for on-going installation, maintenance and support of the solution including hardware.

Following are the detailed descriptions of the expectations from the profiles.

11.1 Project In-charge

11.1.1 Role

- Manages the overall project, resources and deliverables.
- Coordinates with R&D and support organizations of the BSP.
- Coordinates all technical activities with the UID stakeholders
- Provides periodic status reports to the PMC

11.1.2 Qualification & Experience

- Should have over 10 years of experience in software/biometric project/product implementation
- Should have at least four years experience in software project implementation
- Should have advanced degrees in engineering/computer sciences/information technology

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- Should have led a biometric project of comparable size and complexity (10M DB or multi-modal ABIS)

11.2 Integration Engineer

11.2.1 Role

- Provides support for integration of ABIS and SDK.
- Analyzes interoperability issues
- Develops necessary tools to fully integrate with UID application.
- Coordinates with R&D and support organizations of the BSP.
- Works closely with ASDMSA and UIDAI technology team to design the integration
- Helps develop test cases and criteria

11.2.2 Qualification & Experience

- Should have over 7 years of experience in software project/product integration
- Should have at least four years experience in software integration of biometric applications using similar architecture
- Should have been a lead integration engineer for a biometric project of comparable size and complexity (10M DB or multi-modal ABIS)
- Should have advanced degrees in engineering/computer sciences/information technology
- Should have thorough knowledge of Linux, middleware, high performance messaging, Java/J2EE, C, ISO standards for biometrics and other technologies needed for server integration or
- Should have thorough knowledge of Windows, .NET, C#, C, biometric device protocols and formats.

BSP shall provide at least 2 personnel for the above role.

11.3 Biometric Specialist

11.3.1 Role

- Evaluates biometric data quality and analyzes corresponding quality issues
- Configures biometric algorithms
- Trains the biometric solution
- Conducts performance and accuracy experiments

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- Computes performance and accuracy numbers and
- Provides recommendation on optimum configuration of the solution.

11.3.2 Qualification & Experience

- Should have over 7 years of experience in biometric solution implementation
- Should have been a lead biometric specialist for a project of comparable size and complexity (10M DB or multi-modal ABIS)
- Should have good knowledge of application level biometric integration
- Should have advanced degrees in engineering/computer sciences/information technology with emphasis on biometric (or computer vision)
- Should have thorough knowledge biometric algorithms, biometric devices and identity management systems.
- Should have over 2 years of experience in conducting performance and accuracy experiments
- Should have over 2 years of experience with iris devices and algorithm (1 specialist)

BSP shall provide at least 2 personnel for the above role.

11.4 System Performance Specialist

11.4.1 Role

- Optimizes performance of the ABIS through system level configuration and tuning
- Configures the solution for UIDAI to support requirements.
- Estimates hardware and other infrastructure requirements.
- Should be able to assist in the day-to-day tasks, including, but not limited to, monitoring of system activities, analysis of system utilization and resources, capacity control, performance tuning, coordination of system upgrades or fixes, and generating reports as required.

11.4.2 Qualification & Experience

- Should provide highly specialized technical expertise to handle System Administration challenges for systems of size and complexity that are being proposed as part of this solution.
- Should have over 7 years of experience in system administration and system performance

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- Should have been a lead system performance specialist for a project of comparable size and complexity (biometric, high performance middleware, Linux, COTS H/W, high availability)
- Should have good knowledge of biometric systems
- Should have degree in engineering/computer sciences/information technology

11.5 Quality Assurance (QA) & Test Engineer

11.5.1 Role

- Leads QA & test integration teams through all phases of QA activities
- Responsible for designing and conducting integration test for ABIS and SDK
- Implements automation using a variety of automation technologies.

11.5.2 Qualification & Experience

- Should have over 7 years of experience in QA/Test
- Should have been a lead QA engineer for a project of comparable size and complexity (biometric, high performance middleware, Linux, Java/J2EE, .NET)
- Should have good knowledge of application level biometric integration
- Should have degree in engineering/computer sciences/information technology
- Should have previous experience using automation test technologies

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12 Project Plan & Timelines

The project shall commence with the preparation and deployment of the solution in the form of Proof of Concept (PoC) that shall cater to the early enrolments of the residents. The solution initially may not be a fully tested and tuned solution as is expected for the subsequent stages of the project, but should however at minimum, be able to integrate with UID application and meet the performance expectations as stated in Clause 9.2 Implementation of Solution as Proof of Concept.

The BSP shall simultaneously initiate the supply, installation and configuration of the hardware for the solution to cater to 1 Crore enrolments. On completion of the same, the acceptance testing on the solution shall be undertaken based on enrolments already undertaken by the solution. While the solution is formally accepted, it shall be tuned continuously till the time first 1 Crore enrolments are reached or till completion of 12 weeks after acceptance, whichever is earlier. On attaining this milestone, the measurement of SLA shall be undertaken by UIDAI and the solution shall commence formal adherence to the Service Level Agreement for Solution related performance levels as stated in Attachment – Draft Service Level Agreement whereby the BSP shall submit a formal undertaking on SLA compliance. The dynamic allocation shall commence from with the activation of Solution related SLAs as per the rules stated in **Annexure D – Work Allocation & Service Levels**

BSP is expected to follow the schedule as mentioned below. The BSP shall ensure that the Milestones are attained and are accepted by UIDAI as per schedule mentioned in the table below post review.

T is the Date of award of Contract

S. N.	Milestone	Time for Completion
1.	a. Mobilization of Team b. Commencement of supply of hardware for 1 Crore enrolment c. Conduct a kick-off meeting with UIDAI with participation from key personnel proposed for the project to discuss the project plan for way forward d. Submission of plan for procurement, transportation, installation and commissioning of hardware in pilot data center e. Co-ordinate with Data Center service provider and prepare a blue print for deployment of hardware, ensure availability of power and other environmental facilities in the datacenter f. Set up the required Test and Production environment s for the rollout of PoC. The hardware used for Solution Demonstration exercise as part of the RFP evaluation process could be used for the rollout of PoC, if found adequate to meet the requirements based on expected enrolment transactions. g. Begin to supply SDK perpetual licenses of the proposed multimodal SDK to cater to requirements as stated in Clause 4 of this section h. Support ASDMSA in developing the client enrolment software through provisioning licensing, training and services. SDK licenses must not use hardware license key or keyed to ID (such as CPU, serial number, Ethernet ID).	T + 1 Week
2.	a. Setup of Test and Production Environment with a view to start the Proof of Concept for Biometric Solution b. SDK integration with client enrolment software	T+ 1 Week

S. N.	Milestone	Time for Completion
3.	Go-live of solution as Proof of Concept	T+2 Weeks
4.	**Go-live for 1 Crore enrolment** Activities leading to go-live shall include: a. Installation, commissioning and Configuration of the hardware for the 1 Crore enrolments b. Setup of Test and Production Environment with a view to start the Biometric Solution for 1 Crore enrolment c. Installation, commissioning and configuration of Biometric Solution in Test Environment d. System & Integration Testing of the Solution e. Installation, commissioning and Configuration of Biometric Solution on hardware for 1 Crore enrolment in production environment (which is provisioned by the BSP) f. SDK API implementation g. SDK based verification (joint task of ASDMSA & BSP) h. SDK based adjudication workstation (assistance by BSP) i. SDK based monitoring and analysis functional (assistance by BSP) j. **Acceptance of the Solution**	T + 12 Weeks
5.	Commencement of adherence with SLA (Solution related SLA Activation)	T + 24 Weeks (G)
6.	Overall Solution Warranty -Warranty shall cover Software Patch update, upgrades, bug fixing and resolution of hardware and storage issues, backup.	G + 6 Months from Solution related SLA Activation

13 List of Deliverables

Sr. No.	Deliverables	Details
1.	Project Inception Report	Detailed project plan for design and implementation of solution covering all activities and related work products
2.	User Acceptance Testing Report	Unit and Integration Testing Plan and Procedure
		Testing report with fail / pass results and plan to fix the defects
		Unit and Integration Testing Completion Report
3.	Application Manuals	• Technical/Operations manual for applications in English. • User manuals for application in English
4.	Training Deliverables	Training material, manuals and completion report

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Sr. No.	Deliverables	Details
5.	Undertaking for SLA Compliance	BSP shall submit a formal Undertaking on compliance with SLA after go-live as per the timelines stated in Clause 12 of this section
6.	Acceptance of Solution	Final Acceptance of Fullscale Solution after go-live as per the timelines stated in Clause 12 of this section
7.	Quarterly Deliverables	1. Consolidated SLA Compliance Report 2. Log of preventive / break-fix maintenance undertaken. 3. Summary of changes undertaken in all the datacenters including major changes like configuration changes, release of patches, database reorganization, storage reorganization, etc. and minor changes like log truncation, volume expansion, user creation, user password reset, etc. 4. Summary of incidents reported like Application down, Components down, overall downtime, security vulnerabilities detected, hacker attacks / security threats, peaking of utilization, etc 5. Bug / defect resolution reports including the analysis of bugs / defects resolved, pending, completion time, responsiveness, concern areas, etc. 6. Change Request Logs with their resolution status 7. Incident Reporting (as and when it occurs)

Sr. No.	Deliverables	Details
		○ Complete system down – with root cause analysis ○ Peaking of resource utilization on any component ○ Bottlenecks observed in the system and the possible solutions and workarounds. 8. Security Incident Reporting (as and when it occurs) ○ Detection of security vulnerability detection with the available solutions / workarounds for fixing. ○ Hacker attacks, Virus attacks, unauthorized access, security threats, etc. – with root cause analysis and plan to fix the problems
8.	Technical Reports	Input Data Quality report to be submitted at the end of every week and as a consolidated report at the end of every quarter both starting 2nd Quarter.

Annexure F
Minimum Requiremnets

RFP Name	Implementation of Biometric Solution
RFP No.	D-11018/14/Tech/10-UIDAI

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Bid No. D-11018/14/Tech/10-UIDAI

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Reference	Description
VI (a)	**Minimum Requirements**
Annexure VI.a.1	ABIS Requirements
Annexure VI.a.2	SDK Requirements
	Guidance
Annexure VI.a.3	Nature of Requirements
Annexure VI.a.4	Requirements Levels
	Technical Particulars
	Overview
VI.b	Hardware & Storage
VI.c	Softwares

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Component Name	ABIS

Requirement ID	Requirement Description	Importance of Requirement	Scope of Work Reference
ABIS. 001	How will your solution handle change in policies listed?	Level 2	5
ABIS. 002	Is entire ABIS COTS? What is the version? Provide version history of last 2 years. If components are not COTS, please list specific components.	Level 1	6.2
ABIS. 003	Will the demographic data be used and how? Can you handle the policy of using or not using the demographic data?	Level 2	6.2
ABIS. 004	If duplicates are introduced into your database, would it adversely affect your performance in any way?	Level 2	6.2
ABIS. 005	What is the average time taken by your ABIS system to verify (1:1) a query against a reference database? Use your proposed hardware configuration.	Level 1	7
ABIS. 006	How do you accommodate continuous improvement and performance as the database size grows? What is your approach?	Level 1	7
ABIS. 007	What is the average time taken by your ABIS system to de-duplicate a query against a reference database of 10 million records? Use your proposed hardware configuration.	Level 1	7
ABIS. 008	What is the average time taken to create a template from face, fingerprint and iris images (for all template types supported)? Specify your reference hardware configuration.	Level 1	7
ABIS. 009	How do you propose to monitor the performance (accuracies, throughput rates) of your system? Provide the details of the parameters that you measure and log.	Level 2	7
ABIS. 010	The ABIS shall have ability to load balance across servers	Level 1	6.1.1
ABIS. 011	The ABIS shall have ability to utilize dynamically increased CPU, RAM and storage.	Level 1	6.1.1
ABIS. 012	Is your system tolerant to removal/failure of server/blade?	Level 1	6.1.1
ABIS. 013	The ABIS shall have ability to add nodes dynamically without bringing the ABIS down.	Level 1	6.1.1
ABIS. 014	The ABIS should not have a single point of failure and inherent design bottlenecks that stops it from scaling.	Level 1	6.1.1
ABIS. 015	The ABIS shall have ability to utilize network bandwidth provided through multiple interfaces.	Level 3	6.1.1
ABIS. 016	The ABIS shall have ability to scale dynamically within a server depending upon the load.	Level 3	6.1.1
ABIS. 017	Ability to run services in virtualized environments	Level 1	6.1.10
ABIS. 018	Does your system support the use of a private cloud?	Level 2	6.1.10
ABIS. 019	throttling of cpu, network and storage utilization	Level 2	6.1.10
ABIS. 020	role based administration	Level 2	6.1.11
ABIS. 021	automation of administrative tasks	Level 3	6.1.11
ABIS. 022	ability to administer the solution with minimal user intervention with well defined user interfaces and access policies	Level 3	6.1.11
ABIS. 023	a mechanism to configure the logging level for different modules	Level 1	6.1.12
ABIS. 024	a mechanism to generate reports on various performance indicators	Level 1	6.1.12
ABIS. 025	a mechanism to integrate with external reporting tools	Level 1	6.1.12
ABIS. 026	a mechanism to search through the logs with different filters	Level 3	6.1.12
ABIS. 027	a mechanism to rotate the logs based on polices	Level 3	6.1.12
ABIS. 028	work in heterogeneous storage environments with data partitioned across servers	Level 1	6.1.13
ABIS. 029	access only the data to which it was given access	Level 1	6.1.13
ABIS. 030	functions with storage getting provisioned using heterogeneous storage technologies like NAS/SAN/DAS	Level 2	6.1.13



ABIS. 031	support data partitioned across different servers	Level 2	6.1.13
ABIS. 032	capability to backup and restore the data generated in the solution	Level 1	6.1.14
ABIS. 033	ability to backup of the data generated in the solution while continuing to process service requests.	Level 1	6.1.14
ABIS. 034	proper functioning after a restore operation	Level 2	6.1.14
ABIS. 035	allowance for incremental/differential/full backup methods	Level 2	6.1.14
ABIS. 036	All persistent personal information encrypted	Level 1	6.1.2
ABIS. 037	communication with only the UID application.	Level 1	6.1.2
ABIS. 038	Data access by authorized users only	Level 1	6.1.2
ABIS. 039	Use of secure communication protocols while communicating with external components	Level 1	6.1.2
ABIS. 040	security based on Access Control Lists	Level 2	6.1.2
ABIS. 041	Management functions secured (in particular CLEAR & SHUTDOWN)	Level 2	6.1.2
ABIS. 042	running services without super user privileges	Level 3	6.1.2
ABIS. 043	Ability to periodically change the encryption schemes dynamically	Level 3	6.1.2
ABIS. 044	re-factor/replace individual services without bringing the whole system down.	Level 1	6.1.3
ABIS. 045	command line based interface for configuration and management	Level 2	6.1.3
ABIS. 046	automated integration from external management products such as systems management, network management, and other tools	Level 2	6.1.3
ABIS. 047	the specified open standard protocol based communication	Level 2	6.1.3
ABIS. 048	ability to bring its services up and down	Level 1	6.1.4
ABIS. 049	monitoring its cpu/network/storage utilization	Level 1	6.1.4
ABIS. 050	continuous availability of its services even during regular management activities	Level 1	6.1.4
ABIS. 051	monitoring the response time of individual services	Level 2	6.1.4
ABIS. 052	Provide expected percentage of automated identification vs. manual adjudication rate	Level 2	6.1.4
ABIS. 053	integration with technologies that provide data replication to have data high availability	Level 3	6.1.5
ABIS. 054	functionally backward compatible	Level 2	6.1.6
ABIS. 055	reverting back to original configuration in case of an upgrade failure	Level 2	6.1.6
ABIS. 056	upgrading using third party software delivery systems	Level 3	6.1.6
ABIS. 057	reverting back to old configuration after a successful upgrade	Level 3	6.1.6
ABIS. 058	Installation - Is there install script?	Level 1	6.1.7
ABIS. 059	installation and configuration without super user privileges	Level 2	6.1.7
ABIS. 060	Installation -- Configuration across servers through script? Dynamic?	Level 2	6.1.7
ABIS. 061	How does your system handle poor quality Fingerprint, Iris and Face images?	Level 1	6.2.1
ABIS. 062	What fusion mechanism do you use to combine the different modalities? What level of fusion do you propose to use?	Level 1	6.2.1
ABIS. 063	Do you have prior experience in fusion of fingerprint and iris biometrics? List the deployed systems and your specific role in their implementation. What were the volumes handled by each?	Level 1	6.2.1
ABIS. 064	How does your system handle records with missing or incomplete biometric data or extraneous digits in a hand?	Level 2	6.2.1

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ABIS. 065	The operation of the system will be continually monitored for the recognition accuracy (in terms of operational false positive/false negative identification rates). Should there be accuracy degradation, what will be your response?	Level 2	6.2.1
ABIS. 066	Will the demographic data be used and how? Can you handle the policy of using or not using the demographic data?	Level 2	6.2.1
ABIS. 067	Will the face data be used and how? Can you handle the policy of using or not using the face?	Level 2	6.2.1
ABIS. 068	How will ABIS handle de-duplication of record with missing all FP and iris?	Level 2	6.2.1
ABIS. 069	If multi-stage filtering is used for any modality, is it automatic/adaptive? What is the strategy used? How do you configure it? How often?	Level 2	6.2.1
ABIS. 070	If you use filtering, how are the intermediate selection criteria and thresholds determined?	Level 2	6.2.1
ABIS. 071	How is filtering mechanism dependent on biometric data quality, and database size?	Level 2	6.2.1
ABIS. 072	How will ABIS handle de-duplication of record with missing all three biometric modalities?	Level 3	6.2.1
ABIS. 073	UID Biometric API support -- Overall compatibility	Level 1	6.2.1.1
ABIS. 074	Does your fingerprint matching algorithm accommodate rotation? What are the planned constraints?	Level 1	6.2.1.1
ABIS. 075	UID Biometric API support -- Identify & provide scaled score	Level 1	6.2.1.1
ABIS. 076	UID Biometric API support – Identify Against entire DB	Level 1	6.2.1.1
ABIS. 077	UID Biometric API support – Identify General	Level 1	6.2.1.1
ABIS. 078	UID Biometric API support -- Identify provide candidate list	Level 1	6.2.1.1
ABIS. 079	UID Biometric API support – Insert	Level 1	6.2.1.1
ABIS. 080	Describe Candidate list selection process in ABIS (detailed flow chart)	Level 1	6.2.1.1
ABIS. 081	Can the system make use of the operator segmentation of slap fingerprints?	Level 2	6.2.1.1
ABIS. 082	UID Biometric API support – Identify against subset of DB	Level 2	6.2.1.1
ABIS. 083	UID Biometric API support -- Identify list of IDs	Level 2	6.2.1.1
ABIS. 084	UID Biometric API support – Delete	Level 2	6.2.1.1
ABIS. 085	Would your system be able to match Juvenile FP with adult fingerprints of the same individual? How?	Level 2	6.2.1.1
ABIS. 086	How will you support 100% feature extraction? For each modality?	Level 2	6.2.1.1
ABIS. 087	There may be multiple views of the biometric data within the same record. How will the ABIS take advantage of the extra information?	Level 2	6.2.1.1
ABIS. 088	Fused score should be normalized. How do you convert fused score into probability of false positive identification?	Level 2	6.2.1.1
ABIS. 089	Is iris sequence used or relied upon in identification?	Level 2	6.2.1.1
ABIS. 090	Is the algorithm rotation invariant? If not, how is rotation handled? Is the allowed rotation configurable and what is the impact on speed/accuracy?	Level 2	6.2.1.1
ABIS. 091	How do you handle the case where there are only some of the biometric position/modalities within the record match, but not the others? For example, if the ABIS does selection on the iris first, and the iris data does not match, the record will not be retrieved, even if some fingerprints match very well. Please cover the worst case example(s) similar to this, specific to your ABIS	Level 2	6.2.1.1
ABIS. 092	In the case that there are missing fingers, extra fingers or hand abnormalities, the identification should not rely on the sequence of the fingers. Similarly, if the eye is missing, the identification should not rely on whether this is the left or right eye. How is this handled?	Level 2	6.2.1.1
ABIS. 093	Can your FP segmentation algorithm make use of manually segmented coordinates if your segmentation fails when during INSERT?	Level 2	6.2.1.1
ABIS. 094	Do you propose to use facial images in deduplication?	Level 3	6.2.1.1
ABIS. 095	How will you support 100% segmentation?	Level 3	6.2.1.1
ABIS. 096	Do you recommend UID to use black-list and/or white-list in de-duplication? What would be the purpose of the list – is it for efficiency purposes or matching with a different target FPIR?	Level 3	6.2.1.1

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ABIS. 097	Does your identification internally rely on the finger rotation angle provided by the internal segmentation algorithm?	Level 3	6.2.1.1
ABIS. 098	If only one biometric sample, for example one finger, within the query record has a very high degree of similarity with the corresponding sample in a database record, but the other samples in this pair of records are not similar at all, is it guaranteed that such record will be retrieved as a candidate? Explain why	Level 3	6.2.1.1
ABIS. 099	Some fingers have higher probability of sequence errors than others. Is this taken into account? How?	Level 3	6.2.1.1
ABIS. 100	Is 100% of reference DB searched for each modality?	Level 3	6.2.1.1
ABIS. 101	Does your solution have features to support auto correction of fingerprint sequence errors, hand inversion during segmentation?	Level 3	6.2.1.1
ABIS. 102	UID Biometric API support – Configure	Level 1	6.2.1.2
ABIS. 103	UID Biometric API support -- Discover	Level 1	6.2.1.2
ABIS. 104	UID Biometric API support -- Ping	Level 1	6.2.1.2
ABIS. 105	UID Biometric API support -- Shutdown	Level 1	6.2.1.2
ABIS. 106	UID Biometric API support -- Clear	Level 2	6.2.1.2
ABIS. 107	UID Biometric API support -- Identify against single ID (verify)	Level 1	6.2.1.3

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ABIS. 108	UID Biometric API support – Identify against single ID (verify) using ISO template vendor independent section only	Level 1	6.2.1.3
ABIS. 109	Reference Database. Can it export data in open (externally defined) standards format?	Level 2	6.2.2
ABIS. 110	Reference Database use. Nature of DBMS proposed	Level 3	6.2.2
ABIS. 111	Does your system provide all the logs, specified in the RFP and those needed for a complete audit trail?	Level 1	6.2.3
ABIS. 112	System usage reports (CPU usage, memory usage, IO usage)	Level 2	6.2.3.1
ABIS. 113	Activity log	Level 1	6.2.3.3
ABIS. 114	List available Audit log	Level 1	6.2.3.3
ABIS. 115	Change log	Level 1	6.2.3.3
ABIS. 116	Log changes to database records, including deletion of records	Level 1	6.2.3.3
ABIS. 117	Error log	Level 1	6.2.3.3
ABIS. 118	System availability reports	Level 1	6.2.3.3
ABIS. 119	Periodic (such as hourly) statistics on various databases including size	Level 2	6.2.3.3
ABIS. 120	Information on user (operator/manager/supervisor/auditor) roles and/or privileges, including creation/deletion of users and changes to roles.	Level 2	6.2.3.3
ABIS. 121	Can the system do hot upgrades of minor version changes of the ABIS system?	Level 1	6.2.4
ABIS. 122	How do you guarantee 99% ABIS uptime?	Level 1	6.2.4
ABIS. 123	Does your system architecture have a single point of failure?	Level 1	6.2.4
ABIS. 124	Does your system support backup/maintenance without application downtime?	Level 1	6.2.4
ABIS. 125	ABIS – Verify should remain up 99.9%	Level 1	6.2.4
ABIS. 126	ABIS (excluding verify) should remain up 99%	Level 1	6.2.4
ABIS. 127	Can the system do hot upgrades of major version changes of the ABIS system?	Level 2	6.2.4
ABIS. 128	Can your system do dynamic reallocation of tasks to balance the load in case of addition/removal/failure/allotment of hardware?	Level 2	6.2.4
ABIS. 129	Can your system support OS upgrade without interruption to services?	Level 2	6.2.4
ABIS. 130	Can your system support software (such as DBMS) upgrade without interruption to services?	Level 2	6.2.4
ABIS. 131	Do you need to access to any resource on the network other than the UID Application?	Level 1	6.2.5
ABIS. 132	What are the authentication mechanisms for management functions?	Level 1	6.2.5
ABIS. 133	What is the mechanism to secure your database? Do you support encryption?	Level 1	6.2.5
ABIS. 134	ABIS will not have access and should not try to access any network resources except the resources referenced by the URLs provided through the API.	Level 1	6.2.5
ABIS. 135	List available Access log (including physical access of biometric servers)	Level 1	6.2.5
ABIS. 136	auditing all access and modifications (by any user) to biometric data and make these audit trails available. Audit trail should be stored	Level 1	6.2.5
ABIS. 137	All backup data shall be stored in encrypted format using a key(s) available to the UIDAI.	Level 2	6.2.5
ABIS. 138	Are there any provisions to detect intentional fraud in the biometric capture process?	Level 3	6.2.5.1

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ABIS. 139	Are all management, installation, configuration and administration functions available through GUI?	Level 3	
ABIS. 140	All administration and configuration functions should be available through graphical UI (in addition to command level access)	Level 3	
ABIS. 141	Does your hardware and software platforms confirm to the RFP specifications? What are the hardware and software (OS) platforms that you propose to use?	Level 1	6
ABIS. 142	ABIS should Linux OS with both 32 and 64 bit support on X86 COTS H/W	Level 1	6.2.7
ABIS. 143	Is your matching algorithm specifically tuned to any particular processor?	Level 2	6.2.7
ABIS. 144	Ability of the speed to be independent of specific brand of processor (CPU)	Level 3	6.2.7
ABIS. 145	Can the fingerprint verification system accept ISO 19794-2 queries?	Level 1	6.2.8
ABIS. 146	FP template should be stored in reference DB in UID standards format	Level 3	6.2.8
ABIS. 147	How will you support changes/upgrades in the biometric data format standards? Will you convert reference DB? Will you provide support for multiple formats by tagging?	Level 3	6.2.8
ABIS. 148	How will you support standard update to templates, in particular finger print minutiae format?	Level 3	6.2.8

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Annexure VI.a.2

Component Name	*Multimodal SDK*

Requirement ID	Requirement Description	Importance of Requirement	Scope of Work Refrences
SDK.001	Does your SDK provide feedback on Segmentation and Feature extraction failures for each of three modalities? Does it provide any reasons for the failures?	Level 1	6.3
SDK.002	What is the size of the average face, iris and fingerprint (proprietary and ISO/IEC 19794-2) templates?	Level 3	6.3
SDK.003	What is the average time taken by your SDK to match a pair of face, fingerprint or iris templates (for all template types supported)? Specify your reference hardware configuration.	Level 1	7
SDK.004	What is the average time taken by your SDK to create a template from face, fingerprint and iris images (for all template types supported)? Specify your reference hardware configuration.	Level 1	7
SDK.005	What is the average time taken by your FP SDK to identify a record against a reference database of 10,000 records? Specify your reference hardware configuration.	Level 2	7
SDK.006	Does your FP SDK handle missing digits?	Level 1	6.3.1
SDK.007	Able to do sequence check for 2 finger device. How does reliability compare to 4-4-2 sequence check?	Level 1	6.3.1
SDK.008	Does your FP SDK support 1: few identification?	Level 1	6.3.1
SDK.009	Can your FP SDK make use of manually segmented coordinates if your segmentation fails when used for Authentication server verification, manual check or analytics modules?	Level 1	6.3.1
SDK.010	Does your FP SDK support sequence checking?	Level 1	6.3.1
SDK.011	Can your FP SDK handle 2, 3, and 4 finger slap images? With missing fingers?	Level 1	6.3.1
SDK.012	What actionable feedback can your fingerprint SDK provide during the acquisition process? Please list.	Level 1	6.3.1
SDK.013	Can your FP SDK handle rotated fingerprints? What is the range of rotation that you can handle?	Level 2	6.3.1
SDK.014	Able to do sequence check for 3 finger device. How does reliability compare to 4-4-2 sequence check?	Level 3	6.3.1
SDK.015	Does your IRIS SDK accommodate missing iris? How does the quality check deal with this situation?	Level 1	6.3.2
SDK.016	Does the iris SDK do a quality check? What quality measure do you use?	Level 1	6.3.2
SDK.017	What actionable feedback does the iris SDK supply the operator (i.e., distance, motion, gaze, pupil dilation)?	Level 1	6.3.2
SDK.018	Does your Iris SDK accommodate rotation of Iris images? What degree of iris rotation does it tolerate? Is it adjustable?	Level 2	6.3.2
SDK.019	Does the iris SDK support 1:few identification?	Level 3	6.3.2
SDK.020	Does your Face SDK support feature extraction and template generation?	Level 1	6.3.3
SDK.021	Does the face SDK support auto centering, auto cropping and auto rotation correction?	Level 1	6.3.3
SDK.022	Does the face SDK include a quality check? What quality measure do you use?	Level 1	6.3.3
SDK.023	Does the face SDK support auto capture from streaming video?	Level 1	6.3.3
SDK.024	Does your Face SDK support 1: few identification?	Level 2	6.3.3
SDK.025	Did the proposed algorithm participate in the NIST slap segmentation test? Confirm that the proposed algorithm is the same or better the appropriate tests.	Level 1	6.3.4

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SDK.026	Has the proposed fingerprint matcher been tested in the NIST Proprietary Template Test program? Provide the results for the matcher proposed.	Level 1	6.3.4
SDK.027	Did the proposed iris matching algorithm participate in the Irex tests? Provide the results and confirm that the proposed algorithm is the same or better than shown in the tests.	Level 1	6.3.4
SDK.028	Does the SDK support compression/Decompression in WSQ, JPEG 2000, PNG formats with ability to specify the average compression ratio?	Level 1	6.3.4
SDK.029	Affirm that the fingerprint template of the SDK is fully compliant with standard specified in Biometric Standards for UID Applications. How is the compliance tested?	Level 1	6.3.4
SDK.030	Does the iris SDK have the capability of extracting KIND_VGA, KIND_CROPPED and KIND_CROPPED__AND_MASKED images from captured image?	Level 1	6.3.4
SDK.031	Does the iris SDK have the capability of creating and storing iris templates from KIND_VGA, KIND_CROPPED and KIND_CROPPED_AND_MASKED images?	Level 1	6.3.4
SDK.032	Does the iris SDK have the ability to read and write to a variety of industry standard image formats including .PNG, JPEG 2000 and BMP?	Level 1	6.3.4
SDK.033	Does your FP SDK support ISO/IEC 19794-2:2005 compliant template extraction and matching, both without using extended data?	Level 1	6.3.4
SDK.034	Does your FP SDK have the ability to handle a variety of industry standard image formats including .PNG, WSQ and BMP?	Level 1	6.3.4
SDK.035	Can your Face SDK handle a variety of industry standard image formats, including .PNG, JPEG 2000 and BMP?	Level 1	6.3.4
SDK.036	Does your SDK support image conversion between BMP, RAW, JPEG, JPEG 2000, PNG formats?	Level 2	6.3.4
SDK.037	How does your face SDK check for compliance with ISO standards?	Level 2	6.3.4
SDK.038	Does your SDK function correctly on all platforms without hanging or memory leaks over a long period of time?	Level 1	6.3.5
SDK.039	Does the SDK communicate only with the application software without directly accessing any additional resources such as H/W, file or network?	Level 1	6.3.6
SDK.040	Does your SDK work without a dongle or key license during operation?	Level 1	6.3.7
SDK.041	Confirm that the API of the SDK is in pure C (not C++) and that it does not differ between the Windows and Linux versions	Level 2	6.3.7
SDK.042	Does your SDK provide a compact, and easy to use interface without conditional compilations for different platforms?	Level 2	6.3.7
SDK.043	Is the SDK provided a single one for all the modalities or separate one for each modality?	Level 3	6.3.7
SDK.044	Does your SDK support Linux (X86)? Does it have 32 & 64 bit support? Specify the certified Linux platforms that are supported.	Level 1	6.3.8
SDK.045	Does your SDK support Windows XP & Above? Does it support 32 & 64 bit processors?	Level 1	6.3.8



Annexure VI.a.3

Guidance on Requirement Level	
Level 1	There is no option. The system must accomplish the task as stated in the top level specification. Solution provider must figure out how to comply with the requirement.
Level 2	Next requirement or degree level down from Level 1, stating there is no option, however if there is risk associated with the requirement, then the contractor can, if problems occur, apply to mitigate the requirement by following an alternative development option.
Level 3	Next requirement or specified degree level down from Level 2, stating that there are options within the latitude of the designer. If during analysis, the contractor and users find a better way of implementing a requirement and is a suitable variation of what was called for in the requirement.
Level 4	Means optional. This is a nice to have requirement or specification, but is optional.

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	Technical Particulars
1	Bidder shall supply, install & commission the required hardware for succesful deployment of the solution. Sections VI.b provides the minimum requirements of some of the hardware components including the storage devices that the Bidder shall comply with
2	The Bidder must supply, install & commission the hardware at both Primary and BCP sites .
3	Section VI.c provides the list of system and other softwares that the Bidder shall include as part of the black box ABIS solution offered. The Bidder shall comply with the stated minimum requirements for the softwares mentioned. The Bidder shall factor the associated costs as part of the unit price per transaction for de-duplication

D.R. Hasawati, ADG

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Annexure VI.b.1 (i)

Blade Servers

Sr. No	Parameter	Minimum Requirements	Unit of Measurement
1	Power Specification	Indian power specifications in terms of Phase, Voltage, Freq	Ø,V,Hz
	No. of Processors proposed	2	No. CPU/Sockets in one server, can have more cpus in a single blade
	No of cores in each processor	6	No of cores in each physical CPU/socket
	Processor Type (CISC, EPIC, RISC)	x86	CISC / EPIC / RISC
	Type of processor	64-bit	32-bit / 64-bit
	Native support for 32-bit applications	YES	YES/NO
2	Architecture		
	64-bit architecture	YES	YES/NO
3	Main Memory		
	Proposed Memory size	64	GB
	Proposed Main Memory Type	DDR2	(DDR2 / DDR3)
	Main Memory Type	ECC	(ECC / Non ECC)
4	Disk Controller		
	RAID protection type proposed	RAID 0	YES / NO
	No. of channels in the proposed RAID controller	Single	Single / Dual / Quad
	Proposed size of battery backed cache	128 MB	MB
5	Internal Disks		
	Type of disk proposed	SAS/SATA	YES / NO
	Disk capacity	73 GB	GB
	Are Proposed Disks Hot Swappable?	YES	YES / NO
	Max. no. of Disks supported in the proposed server	2	
6	CD / DVD Drive		
	No. of drives proposed	1	
	Is drive writeable / re-writeable?	NO	YES / NO
7	Network		
	Type of Ethernet controller proposed	Full duplex 1 /10 Gbps	YES / NO
	No. of Ethernet Controllers proposed	2	Units
	Dual Homing proposed	YES	YES / NO
	Teaming of Ethernet Controllers proposed	YES	YES / NO
	Total Throughput of all the proposed Ethernet Controllers together		Gbps
	TCP/IP offload engine		YES / NO
8	Host based Adapters		
	Type of HBA proposed	Full duplex Fiber channel	
	Throughput of each of the proposed HBA	4/8 Gbps	Gbps
	No. of Proposed HBA	2	PCI / PCI-X

Annexure VI.b.1 (i)

Blade Servers

Sr. No	Parameter	Minimum Requirements	Unit of Measurement
	I/O Slot used by HBA		PCI / PCI-X
	No. of HBA proposed	2	Units
	No. of ports on each HBA proposed	Dual	Single / Dual / Quad
	Whether only single port is be used on each controller	Yes	YES / NO
	Total Throughput of all the proposed HBA together		Gbps
	Capability to dynamically load balance between multiple HBA	YES	YES / NO
	Support for storage subsystems of leading manufacturers like EMC, Hitachi, HP, IBM, SUN etc.	YES	YES / NO
	LUN Size	10	in TB
	No of LUNs		Max luns supported per server
9	Power Supply		
	Hot Swappable Power supply proposed	YES	YES / NO
	(N+N) redundant power supply proposed	YES	YES / NO
	Dual AC input proposed	YES	YES / NO
10	Cooling Fans		
	Hot Swappable Cooling Fans proposed	YES	YES / NO
11	Operating System		
	Operating Systems proposed on this server	Linux	Redhat/Suse/Others, edition
	Operating system is natively compliant with 32-bit and 64-bit applications	YES	YES / NO
12	File System		
	Maximum file system partition size (file system)	8	TB
13	Support		
	Is the proposed product/solution End-of-life or will reach End-of-life within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO	YES / NO
	Will the proposed product/solution reach End-of-support during the currency of contract?	NO	YES / NO

D.B. Nanawati, DGS

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Annexure VI.b.1 (ii)

Blade Servers Chassis

Sr. No	Parameter	Minimum Requirements	Unit of Measurement
1	Power Specification	Indian power specifications in terms of Phase, Voltage, Freq	Ø,V,Hz
	Backplane redundancy	YES	YES/NO - dual backplane bus for high availability
	Number of 10G Ethernet ports from chassis to external network	2	
	High Availability for 10 G ethernet	YES	
	Number of 1G Ethernet ports - from chassis to external network	2	
	High Availability for 1 G ethernet	YES	
	Number of Fiberchannel ports (4/8 Gbps) from chassis to external network	4	
	High Availability for FC ports	YES	
	Hot Swappable Power supply proposed	YES	YES / NO
	Dual AC input proposed	YES	YES / NO
2	Support		
	Is the proposed product/solution End-of-life or will reach End-of-life within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO	YES / NO
	Will the proposed product/solution reach End-of-support during the currency of contract?	NO	YES / NO

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Annexure VI.b.2 (i)

SAN

Sr. No	Parameter	Minimum Requirement	Unit of Measurement
1	Power Specification	Indian power specifications in terms of Phase, Voltage, Freq	Ø,V,Hz
2	Proposed usable capacity of SAN storage array	10	TB
	Support for Global hot spare disks	YES	YES / NO
	Are Proposed Disks Hot Swappable?	YES	YES / NO
	Capability for Online storage expansion without reboot	YES	YES / NO
	Capability of completely automating activities, including but not limited to, defrag routines, scan disks, disk scrubbing, file system checks, consistency checks, etc.	YES	YES / NO
3	Controllers		
	Hardware based storage RAID controller	YES	YES / NO
	Hot swappable controller cards?	YES	YES / NO
	Type of RAID protection supported	6+1	RAID 0, 1, 5, 1+0, 6+1
	Throughput of each FC port	4 Gbps	4/8 Gbps
	Storage system end-to-end bandwidth from FC host port to backend disk	4 Gbps	4/8 Gbps
4	FC-AL loop		
	Bandwidth of FC-AL loop	4 Gbps	4/8 Gbps
5	Cache		
	Type of proposed Control Cache	ECC	ECC / Non-ECC
	Type of proposed Data Cache	ECC	ECC / Non-ECC
	Is Data Cache board hot swappable?	YES	YES / NO
	Is Control Cache board hot swappable?	YES	YES / NO
	Will the proposed product/solution reach End-of-support during the currency of contract?	NO	YES / NO

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Annexure VI.b.3

Rack Server

Sr. No	Parameter	Minimum Requirements	Unit of Measurement
1	Power Specification	Indian power specifications in terms of Phase, Voltage, Freq	Ø,V,Hz
2	Processor		
	Processor Type (CISC, EPIC, RISC)	x86	CISC / EPIC / RISC
	Type of processor	64-bit	32-bit / 64-bit
	Native support for 32-bit applications	YES	YES/NO
3	Architecture		
	64-bit architecture	YES	YES/NO
4	Main Memory		
	Main Memory Type	ECC	(ECC / Non ECC)
5	Disk Controller		
	RAID protection type proposed	RAID 1	YES / NO
	No. of channels in the proposed RAID controller	Single	Single / Dual / Quad
	Proposed size of battery backed cache	128 MB	MB
6	Internal Disks		
	Type of disk proposed	SAS/SATA/Other	YES / NO
	Disk capacity	73 GB	GB
	Disk Speed	15000 RPM	RPM
	Are Proposed Disks Hot Swappable?	YES	YES / NO
7	Network		PCI / PCI-X
	Type of Ethernet controller proposed	Full duplex 10/100/1000 Mbps	Units
	No. of ports used on each Ethernet controller proposed	Single	YES / NO
	Whether only single port is be used on each controller	Yes	YES / NO
	Dual Homing proposed	YES	Gbps
	Teaming of Ethernet Controllers proposed	YES	YES / NO
	No of 10 G Ethernet ports	2	
	No of 1 G Ethernet ports	2	
8	Host based Adapters		Gbps
	Type of HBA proposed	Full duplex Fiber channel	PCI / PCI-X
	Throughput of each of the proposed HBA	4/8 Gbps	PCI / PCI-X
	No. of HBA proposed	2	YES / NO
	No. of ports used on each HBA proposed	Single	Gbps
	Whether only single port is be used on each controller	Yes	YES / NO
	Capability to dynamically load balance between multiple HBA	YES	
	Support for storage subsystems of leading manufacturers like EMC, Hitachi, HP, IBM, SUN etc.	YES	YES / NO
9	Power Supply		YES / NO
	Hot Swappable Power supply proposed	YES	YES / NO
	(N+1) redundant power supply proposed	YES	
	Dual AC input proposed	YES	YES / NO
10	Cooling Fans		YES / NO
	Hot Swappable Cooling Fans proposed	YES	

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Annexure VI.b.3

Rack Server

Sr. No	Parameter	Minimum Requirements	Unit of Measurement
	(N+1) redundant Cooling Fans proposed	YES	
11	File System		
	Is the file system proposed a Cluster File System	YES	
	Does the file system support Journaling	YES	
28	Support		
	Is the proposed product/solution End-of-life or will reach End-of-life within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO	
	Will the proposed product/solution reach End-of-support during the currency of contract?	NO	
30	Remote Management	YES	

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Annexure VI.b.4

Backup Server

Sr. No	Parameter	Minimum Requirements	Unit of Measurement
1	Power Specification	Indian power specifications in terms of Phase, Voltage, Freq	Ø,V,Hz
2	Processor		
	Processor Type (CISC, EPIC, RISC)	Same as Rack Server	CISC / EPIC / RISC
3	Main Memory		
	Main Memory Type	ECC	(ECC / Non ECC)
4	Disk Controller		
	No. of channels in the proposed RAID controller	Single	Single / Dual / Quad
	Proposed size of battery backed cache	128 MB	MB
5	Internal Disks		
	Disk Speed	15000 RPM	RPM
	No of disks proposed		Units
	Are Proposed Disks Hot Swappable?	YES	YES / NO
6	DVD Drive		
	Optical Drive Proposed	DVD	DVD Drive
	No. of drives proposed	1	
	Is drive writeable / re-writeable?	YES	YES / NO
	DVD-R	YES	YES / NO
	DVD-RW	YES	YES / NO
	DVD+R	YES	YES / NO
	DVD+RW	YES	YES / NO
	DVD-RAM	YES	YES / NO
7	DAT Drive		
	Format Compatibility		
	DDS-1	YES	YES / NO
	DDS-2	YES	YES / NO
	DDS-3	YES	YES / NO
	DDS-4	YES	YES / NO
8	DLT Drive		
	No. of drives proposed	1	
	Format Compatibility		
	SDLT	YES	YES / NO
	DLT IV	YES	YES / NO
9	Network		
	Type of Ethernet controller proposed	Full duplex 10/100/1000 Mbps	YES / NO
	No. of Ethernet Controllers proposed	2	Units
	No. of ports on each Ethernet controller proposed	Single	Single / Dual / Quad
	Dual Homing proposed	YES	YES / NO
	Teaming of Ethernet Controllers proposed	YES	YES / NO
10	Host based Adapters		
	Type of HBA proposed	Full duplex Fiber channel	
	Throughput of each of the proposed HBA	4/8 Gbps	Gbps
	No. of ports on each HBA proposed	Single	Single / Dual / Quad

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Annexure VI.b.4

Backup Server

Sr. No	Parameter	Minimum Requirements	Unit of Measurement
	Total Throughput of all the proposed HBA together	8 Gbps	Gbps
	Capability to dynamically load balance between multiple HBA	YES	YES / NO
	Support for storage subsystems of leading manufacturers like EMC, Hitachi, HP, IBM, SUN etc.	YES	YES / NO
11	Any other software proposed (provide details)		
	Backup software	YES	YES / NO
12	Support		
	Is the proposed product/solution End-of-life or will reach End-of-life within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO	YES / NO
	Will the proposed product/solution reach End-of-support during the currency of contract?	NO	YES / NO

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Annexure VI.b.5

Tape Library

Sr. No	Parameter	Minimum Requirements	Unit of Measurement	Please mention deviations, if any
1	Power Specification	Indian power specifications in terms of Phase, Voltage, Freq	Ø,V,Hz	
2	Tape Drives			
	Type of tape drive proposed	LTO Gen 4		
	Type of tape drive interface	Native fiber channel		
	Sustained Data Transfer Rate (without compression)	120	MB/s	
	Sustained Data Transfer Rate (with compression)	240	MB/s	
	Size of Tape Storage (without compression)	800	GB	
	Size of Tape Storage (without compression)	1500	GB	
	Hot Swappable Tape drive proposed	YES	YES / NO	
	Hot Swappable Controller cards proposed	YES	YES / NO	
3	Tape Library Frame			
	No. of drives proposed	5		
	No. of frames proposed	1		
	No. of Fibre Channel ports proposed with this library	2		
	No. of Media slots proposed in the library	50		
4	Protocol Supported			
		FC	YES / NO	
		FCP	YES / NO	
		FC-AL	YES / NO	
5	Power Supply			
	Hot Swappable Power supply proposed	YES	YES / NO	
	(N+1) redundant power supply proposed	YES	YES / NO	
	Dual AC input proposed	YES	YES / NO	
6	Cooling Fans			
	Hot Swappable Cooling Fans proposed	YES	YES / NO	
	(N+1) redundant Cooling Fans proposed	YES	YES / NO	
7	Support for online automatic calibration of robotic arm	YES	YES / NO	
8	Support for NDMP for taking backup of NAS over LAN	YES	YES / NO	
9	Support for multiple hosts running OS including AIX, HP-UX, Linux, Solaris, Windows	YES	YES / NO	
10	Support			

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Annexure VI.b.5

Tape Library

Sr. No	Parameter	Minimum Requirements	Unit of Measurement	Please mention deviations, if any
	Is the proposed product/solution End-of-life or will reach End-of-life within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO	YES / NO	
	Will the proposed product/solution reach End-of-support during the currency of contract?	NO	YES / NO	
11	Media & Accessories		Hours	
	No. of tape media proposed	2500	Units	
	Size of tape media (uncompressed)	800GB	Units	
	Size of tape media (compressed)	1600GB	Units	
	No. of tape labels proposed	2500	Units	
12	Provisioning of Bar-Code Reader within the Tape Library & integration with proposed Media Management Software	YES		

T. P. Narayani, DGS

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Annexure VI.b.6

Load Balancer

Sr. No	Parameter	Minimum Requirement	Unit of Measurement
1	Power Specification	Indian power specifications in terms of Phase, Voltage, Freq	Ø,V,Hz
2	Operating Relative Humidity range (non-condensing)		%
	Should be a multi processor based appliance	Yes	
	Traffic Throughput	8 Gbps	
	Network Connectivity support	4 x 10/100/1000 , 1Gbps connectivity	
	Memory on the device	8GB	
	L4 concurrent connections	1 Million	
	L4 connections per second	100000	
	L7 concurrent connections	250000	
	Should suport L7 connections per second	35000	
	Should support minimum L7 throughput	4 Gbps	
	Should support SSL offloading & HTTP acceleration from day one in same unit without adding another hardware to save rack space, power & cooling requirements	Yes	
	SSL Throughput	2 Gbps	
	Initial TPS support	35000	
	Max TPS support	50000	
	Hardware Compression Support	6-8Gbps	
	NAT entries	60000	
	Concurrent SSL connections	1,00,000+	
	Virtual Local area Network (Vlans)	512	
	Virtual servers	3000	
	Server farms	2500	
	Real servers	8000	
	Support for stickey table entries	100000	
	Should support Port Aggregation IEEE 802.3ad	Yes	
	Should support Vlan Trunk IEEE 802.1Q	Yes	
	Should have minimum 1Gb Flash Drive	Yes	
	Should support Port Mirroring	Yes	
	Should support following deployments	Yes	
	Routing Mode : where client-side and server-side VLANs are on different subnets	Yes	
	Bridge Mode : where client-side and server-side VLANs are on the same subnets.	Yes	

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Annexure VI.b.6

Load Balancer

Sr. No	Parameter	Minimum Requirement	Unit of Measurement
	Direct Server Response : where SLB load balance an initial request from the client to a real server; however, the server directly responds to the client bypassing the SLB.	Yes	
3	Load Balancing Features		
	Server load balancing based on SNMP parameter like CPU load, Memory utilization etc	Yes	
	Should support Client NAT & Server NAT and PAT and NAT pool for Dynamic NAT	Yes	
	In case of Server / Application failure device should detect it in not more than 30 seconds	Yes	
	In case of Server failure traffic should be diverted to another Server automatically	Yes	
	Should support following content based Load balancing features	Yes	
	Support for protocols namely HTTP, FTP, DNS, Internet Control Message Protocol (ICMP), Session Initiation Protocol (SIP), Real-Time Streaming Protocol (RTSP), Extended RTSP, RADIUS, and Microsoft Remote Desktop Protocol (RDP).	Yes	
	HTTP Header based redirection	Yes	
	Should Support HTTP Header manupulation on Client requests and server responses	Yes	
	URL-Based Redirection	Yes	
	Browser Type Based Redirection	Yes	
	Preferential Treatment (Cookie-Based)	Yes	
	Should support End-to-End SSL Encryption (Backend Encryption)	Yes	
	Should support SSL initiation (SSL between SLB & Servers)	Yes	
	Predictors		

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Annexure VI.b.6

Load Balancer

Sr. No	Parameter	Minimum Requirement	Unit of Measurement
	Load Balancing algorithm should support following algorithm namely Least loaded, Round-robin,Adaptive response,Least bandwidth,Least connections,Hash address,Hash cookie,Hash header,Hash URL	Yes	
	Probe Support should be available for the protocols HTTP, HTTPS, SMTP, POP3, IMAP, RADIUS, SIP, RTSP, SNMP, Telnet, FTP,KAL-AP, ICMP, TCP, UDP, Echo, Finger, DNS	Yes	
	Support for scripted probes	Yes	
4	Server Management Features		
	Should support Graceful shutdown of Servers	Yes	
	Should support Graceful Activation of Servers	Yes	
	Should able to redirect traffic based on Source IP, Destination IP & TCP PORT.	Yes	
5	Virtualization		
	The Load Balancer should support virtualization or segmentation where it should be possible to create virtual partitions from day one. Each of this Partition should be completely isolated from each other wrt dedicated access control and resource allocation	Yes	
	Should support Min & Max resource allocation per virtual Partition	Yes	
	Should support resource sharing between virtual Partitions so in case if resource is available with another virtual partition it can be borrowed automatically		
	Should keep configuration files separately for each virtual partition or segment	Yes	
6	Health Monitoring		
	Should provide individual health checks for real servers & farms	Yes	
	Should allow to monitor protocol like HTTP, SMTP, POP, FTP etc	Yes	

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Annexure VI.b.6

Load Balancer

Sr. No	Parameter	Minimum Requirement	Unit of Measurement
	Should allow to configure Customize health probes based on TCP & UDP parameters	Yes	
	Should provide GUI to configure Health Monitoring	Yes	
	Should provide flexible Script based support for complex environments & advance health monitoring	Yes	
7	Redundancy		
	System and Session redundancy-failover should happen automatically, with no human intervention, Should Provide stateful failover capabilities	Yes	
	Should support Redundancy protocol like VRRP	Yes	
	Should support transparent failover between 2 devices	Yes	
	Should support transparent failover between 2 Virtual Instances configured on 2 different units	Yes	
	Should Supports active-standby and active-active redundancy topologies with automatic configuration synchronization	Yes	
	The failover should be transparent to other networking devices	Yes	
8	Security		
	Support for Access list	1000+	
	Should support HTTP deep packet inspection (HTTP header, URL, and payload)	Yes	
	Should support bidirectional Network Address Translation (NAT) and Port Address Translation (PAT)	Yes	
	Should support TCP Normalization & TCP connection state tracking	Yes	
	Should support ICMP flood guard	Yes	
	Should support Virtual connection state for UDP	Yes	
	Should support Sequence number randomization	Yes	
	Should support TCP header validation	Yes	
	Should support TCP window size checking	Yes	
	Should able to detect & drop same Source port & destination port traffic	Yes	

B.P. Nanavati, DGC

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Annexure VI.b.6

Load Balancer

Sr. No	Parameter	Minimum Requirement	Unit of Measurement
	Should able to detect & drop L4 port 0 traffic	Yes	
9	Application Acceleration		
	Should Support SSL Offloading & Acceleration on same hardware to reduce number of equipment in Data center & save power / cooling requirement	Yes	
	SSL certificates support	6500	
	support for TPS	7500	
	Should support HTTP Compression technologies like GZIP & DEFLATE using dedicated hardware chips	Yes	
	Should use dedicated Hardware Card / Module for compression & not software based compression	Yes	
	Should support dynamic caching technologies	Yes	
	Should store cached content in RAM for faster content delivery	Yes	
	Should support transparent TCP Multiplexing (TCP Offloading)	Yes	
10	Management		
	Role Based administration support namely Admin,Security-admin, Network-Engineer, Network Monitor, Network Manager	Yes	
	Telnet	Yes	
	SSH	Yes	
	HTTPS	Yes	
	RS232 -Console Port	Yes	
	SNMP	Yes	
	Should support GUI for configuration & monitoring	Yes	
11	Support		
	Is the proposed product/solution End-of-life or will reach End-of-life within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO	
	Will the proposed product/solution reach End-of-support during the currency of contract?	NO	

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Appendix VI.b.7

Terminal Server

Sr. No	Parameter	Minimum Requirement	Unit of Measurement
1	Power Specification	Indian power specifications in terms of Phase, Voltage, Freq	Ø,V,Hz
2	Network		
	No. ofasynchrnonous ports	24	number
	WAN Interfaces	Serial/BRI/PRI/ Dialup ,xDSL	YES / NO
	Auxiliary and Console ports	YES	YES / NO
3	Support		
	Is the proposed product/solution **End-of-life** or will reach **End-of-life** within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO	YES / NO
	Will the proposed product/solution reach **End-of-support** during the currency of contract?	NO	YES / NO
4	Remote Management	Hardware based, Operating System Independent Remote Management having Integrated Management Log, Support for multiple user accounts with customizable access privileges with SSL level security, SNMP.	YES / NO

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Appendix VI.b.8

Technical Specifications for Firewall -Dedup-DB Firewall

Sl No	Parameters	Minimum Requirements	Unit of Measurement
1	Power Specification	Indian power specifications in terms of Phase, Voltage and Frequency	Ø,V,Hz
2	Architecture		
	The appliance a multiprocessing system Architecture for high performance	Yes	YES/NO
	System should support Firewall, IPSec, VPN, SSL VPN, Unlimited users/nodes	Yes	YES/NO
3	High Availability Features		
	Capability to detect hardware failure duing powerup and before going online	Yes	YES/NO
	Stateful failover to prevent session losses to minimal. Firewall support rack serviceability with easy access mainboard	Yes	YES/NO
	Software reconfiguration/ configuration changes are immediate effect	Yes	YES/NO
	Support active/active and active/standby failover	Yes	YES/NO
	Should support VPN Clustering and Loadbalancing	Yes	YES/NO
	Support in-built environmental monitoring capabilities.	Yes	YES/NO
4	Concurrent Sessions	at least 1500000 and at least 80000 sessions per second	
5	System Throughput	at least 5Gbps and higher	gbps
6	Memory	at least DRAM - 5GB or higher at least Flash Memory 1GB- or higher or any other storage if required	GB
7	Ports	minimum 4 Nos 1 Gbps ports and expandable minimum 6 Nos of 10Gbps Ports and expandable	units
8	Expansion option	Network interfaces like Fast Ethernet/Gig Ethernet/10G Ethernet modules	units
9	Application and protocol inspection	Should integrate with more than 24 specilized inspection engines for protocols such as: (but not limited)	
		Advanced Web Browsing (HTTP)	YES/NO
		File Transfers (FTP)	YES/NO
		Electronic mail (SMTP)/eSMTP	YES/NO
		Domain Name System (DNS)	YES/NO

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Appendix VI.b.8

Technical Specifications for Firewall -Dedup-DB Firewall

		Simple Network Management Protocol (SNMP)	YES/NO
		Database (SQL*Net)	YES/NO
		Network File System (NFS)	YES/NO
		IP Telephonu - H.323,SIP	YES/NO
		VoIP	YES/NO
		Session Initiation Protocol (SIP)	YES/NO
		Real-Time Streaming Protocol (RTSP)	YES/NO
		Internet Locator Service (ILS)	YES/NO
		Provider voice services (MGCP,GTP/GPRS)	YES/NO
		Network Information services (NIS+)	YES/NO
		Stateful ICMP inspection	YES/NO
		IPv6 transparent	YES/NO
		Timebound, Out bound ACLs	YES/NO
		Inspection engine should support an interface,network or host	YES/NO
		Tunneled applications (peer-to-peer file sharing or instant messaging)	YES/NO
10	Support VPN	Supports:	
		IKE	YES/NO
		IPSec VPN standards	YES/NO
		PPTP	YES/NO
		56-bit DES	YES/NO
		168-bit 3DES	YES/NO
		OSPF routing and QOS over VPN	YES/NO
		Diffie Hellman Group 7	YES/NO
		x.509	YES/NO
		Up to 256-bit AES data encryption	YES/NO
11	Authentication, Authorization and Accounting (AAA) support	Integrates with popular AAA services via	YES/NO
		RADIUS	YES/NO
		TACACS+	YES/NO
		Acounting for management traffic	YES/NO
		Native Active Directory user authentication(VPN only)	YES/NO
		Native SecureID authentication (VPN only)	YES/NO
12	Other	Support for:	
		Port redirection and TCP intercept	YES/NO
		Rack Mountable	YES/NO
		ActiveX blocking	YES/NO
		URL filtering and Java Security	YES/NO

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Appendix VI.b.8

Technical Specifications for Firewall -Dedup-DB Firewall

		Support against all network and application level attacks ranging from malformed packet attacks to DoS attacks	YES/NO
		Support for ability to customize protocol port numbers	YES/NO
		Support upto 1536 bit RSA and Diffie-Hellman, MD-5,SHA-1	YES/NO
13	DHCP relay	Forwards DHCP requests from internal devices to an administrator-specified DHCP server, enabling centralized distribution, tracking, and maintenance of IP addresses	YES/NO
		Provides:	YES/NO
		Rich dynamic NAT and PAT services	YES/NO
		Static NAT and PAT services	YES/NO
		Policy-based NAT and PAT services	YES/NO
14	X.509 certificate and CRL support	Supports Simple Certificate Enrollment Protocol (SCEP)-based enrollment with leading X.509 solutions from Baltimore, Entrust, Microsoft, and VeriSign	YES/NO
15	Management		
		Web based management to support for remote monitoring	YES/NO
		Accessible through variety of methods including : Telnet, Console Port,SSH	YES/NO
		Dedicated Out-of-Managenet interface	YES/NO
		Support SNMPv1, v2, v3	YES/NO
		Support for security event logging	YES/NO
		Support real time alerting and notification features and syslog	YES/NO
		Should have the ability to create customizable administrative roles/profiles (monitoring only, read-only access to configuration, VPN	YES/NO

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Appendix VI.b.8

Technical Specifications for Firewall -Dedup-DB Firewall

16	End point verification		
		Support for end point authorization based on multiple variables of each VPN connection associated with specific tunnel or session	YES/NO
17	Software features		
18		support for RIPv2, OSPF,VLAN, LAN Based failover, DHCP. Support, static&Dynamic NAT/PAT. Support H.323,SIP,FTP,etc. Bidictional NAT, NAT trasparency, Split tunneling VPN.	YES/NO
19	Software	Latest release with all supported features as required	
20	Broadcast Application		
		Support for Microsoft Networking client server communication	YES/NO
		support for multimedia Real Audio Video Stream Works, Applications based on H.323 standards	YES/NO
		Support for Oracle SQL and ERP applications	YES/NO
21	Client VPN		
		support and not limited to Internal websites/web enabled applications.	YES/NO
		Email- POP3S,IMAP4S,SMTPS.	YES/NO
		Support also telnet,RDP,VNC. MAPI and Application Access support	YES/NO
22	Mounting	Standard 19-in rack with required hardware	YES/NO
23	Compatability with proposed network devices	Yes	YES/NO
24	Compatability with proposed network security devices	Yes	YES/NO

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Appendix VI.b.8

Technical Specifications for Firewall -Dedup-DB Firewall

25	Compatability with proposed servers	Yes	YES/NO
26	Power Supply		
	Hot Swappable Power supply proposed	Yes	YES / NO
	(N+1) redundant power supply proposed	Yes	YES / NO
	Dual AC input proposed	Yes	YES / NO
27	Cooling Fans		
	Hot Swappable Cooling Fans proposed	Yes	YES / NO
	(N+1) redundant Cooling Fans proposed	Yes	YES / NO
28	Support		
	Is the proposed product/solution **End-of-life** or will reach **End-of-life** within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO	
	Will the proposed product/solution reach **End-of-support** during the currency of contract?	NO	
	Will the proposed product/solution reach **End-of-support** during the currency of contract?	NO	

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Appendix VI.b.9

Web Server

Sr. No	Parameter/ Features	Minimum Requirements	Unit of Measurement
1	Protocols Supported	http(s)	YES / NO
2	Security & Authentication		
	Client Authentication	Userid/Passoword, PKI (digital certificates)	
3	Support		
	Is the proposed product/solution End-of-life or will reach End-of-life within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO	YES / NO
	Provide new version upgrades, updates, patches, etc. for all the components / sub-components through the period of contract	YES	YES / NO
	Will the proposed product/solution reach End-of-support during the currency of contract?	NO	YES / NO

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Appendix VI.b.10

Fire Resistant Cabinets

Sr. No	Parameter	Minimum Requirements	Unit of Measurement
7	Interior Temperature range	50 °C	°C
8	Interior Relative Humidity range (non-condensing)	80%	%
12	Maximum Temperature sustainable at the required interior Temperature and humidity	1000 °C	°C
13	Maximum exposure time to fire	1 hour	hours
14	Comply to Class UL-125 - 1 hour specifications	YES	YES / NO
15	Manufacturer of cabinets is ISO 9001:2000 certified	YES	YES / NO
16	Warranty for period of contract	YES	YES / NO

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Appendix VI.c.1

Virtualization Server Software

Sr. No	Parameter/ Features	Minimum Requirements	Unit of Measurement
1	Support		
	Is the proposed product/solution **End-of-life** or will reach **End-of-life** within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO	YES / NO
	Provide new version upgrades, updates, patches, etc. for all the components / sub-components through the period of contract	YES	YES / NO
	Will the proposed product/solution reach **End-of-support** during the currency of contract?	NO	YES / NO

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Appendix VI.c.2

Virtualization Server Manager Software

Sr. No	Parameter/ Features	Minimum Requirements	Unit of Measurement
1	General management		
	Performance monitoring capabilities includes resource utilization (CPU utilization, memory, disk I/O, and network I/O) for a host server and virtual machine	YES	YES/NO
	Maintain version and inventory of virtual machines	YES	YES/NO
	Automated deployment of VMs, OS patches and applications	YES	YES/NO
2	Support		
	Is the proposed product/solution **End-of-life** or will reach **End-of-life** within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO	YES / NO
	Provide new version upgrades, updates, patches, etc. for all the components / sub-components through the period of contract	YES	YES / NO
	Will the proposed product/solution reach **End-of-support** during the currency of contract?	NO	YES / NO

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Appendix VI.c.3

Backup Software

Sr. No	Parameter/ Features	Minimum Requirements	Unit of Measurement	Please mention deviations, if any
1	Should have capability to support for all major Operating system clients including, but not limited to AIX, HP-UX, Solaris, Microsoft Windows, Linux, etc.	YES	YES / NO	
2	Support for heterogeneous storage solutions including EMC, Hitachi, HP, IBM, Network Appliance, Sun, etc.	YES	YES / NO	
3	Should be flexible and configurable to adapt to organization's backup policy.	YES	YES / NO	
4	Should have capability to generate scripts	YES	YES / NO	
5	Should have support for Development kits / API for customization of scripts.		YES / NO	
6	Capability to configure automated backups with customized frequency based scheduling based on the backup policy.	YES	YES / NO	
7	Full fledged Media Library Management, including complete and automated offsite tape management, creation of pickup and drop lists, tracking of tapes, etc.	YES	YES / NO	
8	Should be configurable for incremental backups or full-backup of the applications, database, files, etc.	YES	YES / NO	
9	Capability to leverage Storage Area Networks (SAN), Network Attached Storage (NAS) and Gigabit Ethernet for backup and recovery	YES	YES / NO	
10	Should leverage provisioning of Business Copy by various storage vendors for zero-downtime backup.	YES	YES / NO	
11	Rich GUI with single screen monitoring for complete backup / restore activities	YES	YES / NO	
12	Capability to retrieve selectively based on search criteria		YES / NO	
13	Capability to backup the entire configuration of the server and restore it from scratch the entire system including configuration when in a scenario of hardware failure.	YES	YES / NO	

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Appendix VI.c.3

Backup Software

Sr. No	Parameter/ Features	Minimum Requirements	Unit of Measurement	Please mention deviations, if any
14	Time required for the restoration of the configuration on to the server		Minutes	
15	Capability to read and write multiple streams simultaneously to / from one or more tapes and from more than one clients/servers	YES	YES / NO	
16	Should allow for a failed backup or recovery job to be resumed from the point of failure rather than restarting the job all over again.	YES	YES / NO	
17	Should allow for a failed backup or recovery job to be resumed from the point of failure rather than restarting the job all over again.	YES	YES / NO	
18	Should be configurable for usage of network bandwidth it should provide the administrator the capability to throttle and restrict bandwidth usage on LAN.	YES	YES / NO	
19	Capability to integrate with the ERM proposed	YES	YES / NO	
20	Support			
	Is the proposed product/solution End-of-life or will reach End-of-life within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO	YES / NO	
	Provide new version upgrades, updates, patches, etc. for all the components / sub-components through the period of contract	YES	YES / NO	
	Will the proposed product/solution reach End-of-support during the currency of contract?	NO	YES / NO	

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Appendix VI.c.4

Replication Software

Sr. No	Parameter/ Features	Minimum Requirements	Unit of Measurement	Please mention deviations, if any
1	Support			
	Is the proposed product/solution End-of-life or will reach End-of-life within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO	YES / NO	
	Provide new version upgrades, updates, patches, etc. for all the components / sub-components through the period of contract	YES	YES / NO	
	Will the proposed product/solution reach End-of-support during the currency of contract?	NO	YES / NO	

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Appendix VI.c.5

Anti-Virus Software

Sr. No	Parameter/ Features	Minimum Requirements	Unit of Measurement
1	Product Name	McAfee / Symantec / Trend Micro/Other	
2	Version	Enterprise Edition	
Licenses for components that are prices and sold separately should be indicated as			
	Other 2		
3	Protection for Desktop / Servers	YES	YES / NO
4	Security for SMTP	YES	YES / NO
5	Security for Microsoft Exchange/Lotus Domino	YES	YES / NO
6	Security for Lotus Domino	YES	YES / NO
7	Gateway Antivirus	YES	YES / NO
8	Support		
	Is the proposed product/solution **End-of-life** or will reach **End-of-life** within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO	YES / NO
	Provide new version upgrades, updates, patches, etc. for all the components / sub-components through the period of contract	YES	YES / NO
	Will the proposed product/solution reach **End-of-support** during the currency of contract?	NO	YES / NO

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Appendix VI.c.6

Syslog Software

Sr. No	Parameter/ Features	Minimum Requirements	Unit of Measurement
Licenses for components that are prices and sold separately should be indicated as			
1	No. of Licenses (Primary Site)		
	Client	For all servers and devices	
2	Capable of receiving messages via UDP, TCP or SNMP	YES	YES / NO
3	Capable of forwarding messages via UDP or TCP	YES	YES / NO
4	Capable of sending SNMP traps	YES	YES / NO
5	Buffer for 20000 Syslog messages to ensure no loss of messages under heavy load.	YES	YES / NO
6	Support RFC3164 send and receive options	YES	YES / NO
7	Pass values from the received Syslog message to an external program, e-mail message or Syslog message	YES	YES / NO
8	Support		
	Is the proposed product/solution End-of-life or will reach End-of-life within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO	YES / NO
	Provide new version upgrades, updates, patches, etc. for all the components / sub-components through the period of contract	YES	YES / NO
	Will the proposed product/solution reach End-of-support during the currency of contract?	NO	YES / NO

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Appendix VI.c.7

Cluster File System

Sr. No	Parameter/ Features	Minimum Requirements	Unit of Measurement
1	Should be certified by db vendors for operation in active-active, active-standby mode	YES	YES / NO - list support/constraints if any with the databases Oracle, MySQL, MS SQL,DB2
2	Should also have capability to run the database on raw file system if required.	YES	YES / NO
3	Journaled File System	YES	YES / NO
4	Capability for online resizing, online backups and online defragmentation	YES	YES / NO
5	Support		
	Is the proposed product/solution End-of-life or will reach End-of-life within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO	YES / NO
	Provide new version upgrades, updates, patches, etc. for all the components / sub-components through the period of contract	YES	YES / NO
	Will the proposed product/solution reach End-of-support during the currency of contract?	NO	YES / NO

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Appendix VI.c.8

SAN Fabric Manager

Sr. No	Parameter/ Features	Minimum Requirements	Unit of Measurement
1	Should provide a GUI based software	YES	YES / NO
2	Should be integrated with the proposed ERM solution to offer a single window for monitoring.	YES	YES / NO
3	Capabilities and visibility to capture status of entire Storage Area Network objects.Example:Fabric Switches, Storage etc..	YES	YES / NO
4	Should have capability for automated monitoring and notification of changes in the fabric	YES	YES / NO
5	Enable dynamic discovery and control of all SAN components.	YES	YES / NO
6	Capability for Fabric, switch and port naming and enable assignment of specific names to SAN objects.	YES	YES / NO
7	Capability for change management so as to tracks changes to fabric objects.	YES	YES / NO
8	Capability for traffic prioritization from Hosts at FC port level.	YES	YES / NO
9	Should allow administrators to capture configuration of switch, backup the same and compare it to current switch configurations	YES	YES / NO
10	Should undertake end-to-end Performance Monitoring and permit early fault detection and isolation along with performance measurement.	YES	YES / NO
11	Security protection for management should make use of digital certificates and digital signatures, multiple levels of password protection, strong password encryption and PKI-based authentication.	YES	YES / NO
12	Capability for Hardware enforced Zoning	YES	YES / NO
	Wizards for zone configuration, inter-VSAN routing (IVR), PortChannels, Fibre Channel over IP (FCIP) tunnels, and IP access control lists (ACLs) Support Zoning / LUN masking, port binding, port masking, etc.	YES	YES / NO
	Support for Detailed Fabric configuration example: Port Configuration, Supervisor Module Upgrade, Hardware replacement ,Compare switch configurations etc	Yes	
	Support for CLI interface from GUI	Yes	

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	Interoperability support with different Fabric Switch Manufacturer	No	
	Support for Managing more than one Fabric Management Instance	No	
	Support for Managing FCOE Switches	No	
	Support for ,Schedule periodic backups of running switch configuration	Yes	
13	Support for Managing Fabric switch alarms, Notifications and Events	Yes	
	Support for reporting of Storage Area Network on Inventory, Port Utilization, Zone Configuration, Trunk Configuration,Performance Reports namely, Port Utilization, Switch Bandwidth utilization, Report on health of the fabric switch, Report on License Utilization and inventory	Yes	
14	Is the proposed product/solution **End-of-life** or will reach **End-of-life** within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO	YES / NO
	Provide new version upgrades, updates, patches, etc. for all the components / sub-components through the period of contract	YES	YES / NO
	Will the proposed product/solution reach **End-of-support** during the currency of contract?	NO	YES / NO

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Appendix VI.c.9

Storage Manager

Sr. No	Parameter/ Features	Minimum Requirements	Unit of Measurement
1	Should provide a GUI based software	YES	YES / NO
2	Should be integrated with the proposed ERM solution to offer a single window for monitoring.	YES	YES / NO
3	Capabilities manage heterogeneous storage arrays from leading vendors		
	EMC	YES	YES / NO
	Hitachi	YES	YES / NO
	HP	YES	YES / NO
	IBM	YES	YES / NO
	Network Appliance	YES	YES / NO
	Sun	YES	YES / NO
4	Should integrate with proposed Backup software	YES	YES / NO
5	Policy Management		
	Configuration of parameters	YES	YES / NO
	Volume allocation	YES	YES / NO
	Storage reconfiguration	YES	YES / NO
	Cache management	YES	YES / NO
	Reallocation of capacity	YES	YES / NO
	Monitoring, analyzing, tuning performance	YES	YES / NO
	Automated customizable policy based provisioning / allocation of storage	YES	YES / NO
6	Addition of new hosts without any downtime	YES	YES / NO
7	Fast file system recovery	YES	YES / NO
8	Extent-based allocation of disk to files	YES	YES / NO
9	Online file de-fragmentation	YES	YES / NO
10	Directory optimization	YES	YES / NO
11	Dynamic load balancing with functionality for spreading I/O between the multiple paths of multi-controller disk arrays to increase the performance and availability	YES	YES / NO
12	Automatic path failover and dynamic recovery	YES	YES / NO
13	Monitor all the paths that are configured	YES	YES / NO
14	Support periodic auto detection of failed path without the need for manual detection	YES	YES / NO
15	Capability to define, configure, add, delete, expand, and reassign Logical Unit (LUN) to specific paths non-destructively and without having to reboot the system.	YES	YES / NO
16	Provide various reports for management	YES	YES / NO

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17	Measure the performance statistics of each and every component of the storage subsystem and should also provide an extensive set of graphs.	YES	YES / NO
18	Real time and historical monitoring and support threshold based alert mechanism	YES	YES / NO
19	Support		
	Is the proposed product/solution **End-of-life** or will reach **End-of-life** within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO	YES / NO
	Provide new version upgrades, updates, patches, etc. for all the components / sub-components through the period of contract	YES	YES / NO
	Will the proposed product/solution reach End-of-support during the currency of contract?	NO	YES / NO

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Appendix VI.c.10

Network Management Console Software

Sr. No.	Parameter/ Features	Minimum Requirements	Unit of Measurement
1	Product Name	Network Management Software	
2	software	latest release with all software features and licenses as requried on both server and clients	
3	Support		
	Is the proposed product/solution End-of-life or will reach End-of-life within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO	YES / NO
	Provide new version upgrades, updates, patches, etc. for all the components / sub-components through the period of contract	YES	YES / NO
	Will the proposed product/solution reach End-of-support during the currency of contract?	NO	YES / NO

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Appendix VI.c.11

Linux Operating System

Sr. No	Parameter/ Features	Minimum Requirements	Unit of Measurement
1	Product Name	Red Hat Linux	
2	Version	Redhat Ent. Linux 5.0 (upgrade 1 or higher)	
3	No. of Licenses (Primary Site)		
	Max Physical CPU/sockets per server	2	
4	Memory		
	Max physical memory per server	64	GB
	Max file system size (each)	10	TB
5	Support		
	Is the proposed product/solution End-of-life or will reach End-of-life within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO	YES / NO
	Provide new version upgrades, updates, patches, etc. for all the components / sub-components through the period of contract	YES	YES / NO
	Will the proposed product/solution reach End-of-support during the currency of contract?	NO	YES / NO

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Windows Operating System

Appendix VI.c.12

Sr. No	Parameter/ Features	Minimum Requirements	Unit of Measurement
1	Product Name	Windows	
2	Version	2003/2008	
3	No. of Licenses (Primary Site)		
	Max Physical CPU/sockets per server	2	
4	Support		
	Is the proposed product/solution End-of-life or will reach End-of-life within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO	YES / NO
	Provide new version upgrades, updates, patches, etc. for all the components / sub-components through the period of contract	YES	YES / NO
	Will the proposed product/soiution reach End-of-support during the currency of contract?	NO	YES / NO

L-1 Identity Solutions Limited

Appendix VI.c.13

OS Clustering Software

Sr. No.	Parameter/ Features	Minimum Requirements	Unit of Measurement
1	Should be certified by Databases for operation in active-active, active-standby mode	YES	YES / NO (list supported databases)
2	Should provide support for running multiple instances of the same application on the cluster.	YES	YES / NO
3	Should support non-intrusive TCP connection failover.	YES	YES / NO
4	Should ensure cluster members stay in sync and communicate their status instantly through cluster interconnect.	YES	YES / NO
5	Should allow simultaneous access to share storage from multiple servers that are configured in load sharing mode.	YES	YES / NO
6	Should allow policy-based, cascading, and multi-directional fail-over.	YES	YES / NO
7	Should be capable of intelligent workload management and should allow administrators to set fail-over policies based on server capacity thresholds and available resources.	YES	YES / NO
8	Should provide easy management through user friendly GUI interface.	YES	YES / NO
9	Should be compatible and should integrate with the backup software provisioned.	YES	YES / NO
10	Support		
	Is the proposed product/solution End-of-life or will reach End-of-life within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO	YES / NO
	Provide new version upgrades, updates, patches, etc. for all the components / sub-components through the period of contract	YES	YES / NO
	Will the proposed product/solution reach End-of-support during the currency of contract?	NO	YES / NO

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Appendix VI.c.14

Technical Specifications for Event Correlation, management and monitoring

Sl No	Parameters	Minimum Requirements	Unit of Measurement
1	Power Specification	Indian power specifications in terms of Phase, Voltage and Frequency	Ø,V,Hz
2	Product Name	Enterprise event correlation,security monitoring and management	unti
3	Version	Latest software with all features as required for the solution	
4	Network Interface	1G Ethernet or 10G Ethernet	gbps
5	Number of Network Interfaces	at least 2	
6	number of events	minimum 7000 event per sec	YES/NO
7	number of devices	miimum 900 devices	YES/NO
8	Event/Log ciollection storage	at least 1TB storage, RAID protected, High Performance disks	YES/NO
9	Support Log encryption	yes	YES/NO
10	Support high availability	yes	YES/NO
11	Log Replication capabilities	yes	YES/NO
12	Data management tools(copy, purge and move)	yes	YES/NO
13	Event/Log collection:		
	Collect events and logs at real time to a centralized log and Event Management system with secure storage	yes	YES/NO
	Regular signature and vulnerability information	yes	YES/NO
14	System Device support Capabilities		
14.1	Operating system		
	support not limiting to MS Windows, Linux, Solaris, HP UX, AIX	yes	YES/NO
14.2	Network Devices		
	Support device Support not limiting to Routers, Switches, Wireless Access points	yes	YES/NO
14.3	Database		
	Support not limiting to Oracle, MS SQL	yes	YES/NO
14.4	Security Device		
	Support not limiting to Firewalls, IPS,NIDS, NIPS,HIDS, Antivirus Solutions, IPSec gateways	yes	YES/NO
14.5	Virtual Environments		
	support not limiting to Vmware, Vcenter,Vmware	yes	YES/NO

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14.6	Customization capabilities to support home grown applications	yes	YES/NO
15	Alert and Correlation		
	Web based ability to monitor and manage devices which are part of solution	yes	YES/NO
	Correlation support but not limited to - Rule Based, Behaviour Based, Vulnerability based, User defined, Baseline based	yes	YES/NO
	Provide real-time dashboard and global view of all data capatured	yes	
	Ability to define the network baseline and alerts	yes	YES/NO
	Capability to alert via but not limiting to -email, syslog notifications, SNMP traps, syslog	yes	YES/NO
16	Reports		
	Standard reports should be available as part of solution and made available as and when vendor release the upgrade at no cost	yes	YES/NO
	Ability to schedule standard user defined reports	yes	YES/NO
17	Management		
	System should allow multi user access	yes	YES/NO
	AAA support for TACACS, RADIUS, Active Directory	yes	YES/NO
	Role Based Access to administrator web portal	yes	YES/NO
18	Process		
	Support ticketing/workflow management capabilities	yes	YES/NO
	Allow third party ticketing systems like but not limited to - BMC Remedy, CA Unicenter, Service Desk, etc..	yes	YES/NO
	Automatic incident creation based on alerts	yes	YES/NO
19	Mounting	Standard 19-in rack with required hardware	
20	Compatability with proposed network devices	Yes	YES/NO
21	Compatability with proposed	Yes	YES/NO
22	Power Supply		
	(N+1) redundant power supply proposed	YES	YES / NO
23	Cooling Fans		
	(N+1) redundant Cooling Fans proposed	YES	YES / NO
24	Support		
	Is the proposed product/solution End-of-life or will reach End-of-life within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO	YES/NO

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	Will the proposed product/solution reach End-of-support during the currency of	NO	YES/NO

L-1 Identity Solutions

Annexure G

Letter for withdrawing the Technical Deviations

L-1 IDENTITY SOLUTIONS

July 6, 2010

Shri B. B. Nanawati
Deputy Director General
Unique Identification Authority of India (UIDAI)
Planning Commission, Govt. of India (GoI)
3rd Floor, Tower II, Jeevan Bharati Building
Connaught Circus
New Delhi – 110001

Re: L-1 Identity Solutions Operating Company
UIDIA – RFP; L-1 Consortium Retraction of Deviations

Dear Shri B.B. Nanawati,

This letter serves as a formal retraction of all deviations taken by L-1 Identity Solutions Operating Company ("L-1") contained in L-1 Consortium's Proposal dated June 31, 2010. More specifically, please consider all deviations noted in Annex 4.1.8 (Statement of Deviations from Bid Terms and Conditions) and Annex 4.2.4 (Statement of Commercial Deviations from Bid Terms and Conditions) of L-1's proposal formally retracted and of no further force or effect. All other terms, conditions and provisions set forth in L-1's proposal remain unchanged as originally submitted.

Given the importance and value of L-1's intellectual property to the company, as well as the significant capital outlay that will be necessary on the part of L-1 were the UIDAI to award a contract to the L-1 Consortium, L-1 would appreciate the opportunity to further clarify appropriate copy protection means for the algorithms contained in L-1's multi-modal SDK, as well as the UIDAI's right to terminate the contract for convenience at the time we discuss the final contract terms, if awarded.

We understand that the Director General and members of the Selection Committee of the UIDAI have indicated their position that, as a policy matter and from a practical point of view, the terms and conditions mentioned in the RFP in respect of the issues raised by the deviations taken in Annexes 4.1.8 and 4.2.4 are applicable only to the Biometric Solutions Provider / Prime Respondent (L-1) and would not be viewed by the UIDAI to apply to other consortium members that are part of the Biometric Solution Provider's Team.

Respectfully submitted,

Machiel van der Harst
Technology Officer,
L-1 Identity Solutions Operating Company

177 Broad Street, 12th Floor Stamford, CT 06901 203-504-1100

D.P. Nanawati, DDG
Unique Identification Authority of India,
Planning Commission, Govt. of India,
Connaught Circus, New Delhi-110001

L-1 Identity Solutions Operating Company Private Limited

Annexure H – Breakup of Cost

Unit Price for Enrollment Allotted Transaction for de-duplication services (in INR)			
Item Description	Base Price	Total Taxes, Duties and Levies	Total Price
Price quoted per allotted transaction for de-duplication services	2.49	0.26	2.75

Annexure I

Non-Disclosure Agreement as submitted by M/s L-1 Identity Solutions Operating Company Private Limited

B. B. Nanawati, DDG

L-1 Identity Solutions Operating Company Private Limited

Annexure J

Technical Bid as submitted by M/s L-1 Identity Solutions Operating Company Private Limited

Annexure K

Commercial Bid as submitted by M/s L-1 Identity Solutions Operating Company Private Limited

Annexure L

Acceptance Letter of L1 Bidder commercial quote

L-1 IDENTITY SOLUTIONS

July 16, 2010

Shri B. B. Nanawati
Deputy Director General
Unique Identification Authority of India (UIDAI)
Planning Commission, Govt. of India (GoI)
3rd Floor, Tower II, Jeevan Bharati Building
Connaught Circus
New Delhi – 110001

Re: L-1 Identity Solutions Operating Company;
UIDAI – RFP

Dear Shri.B.B. Nanawati,

Based on the UIDAI's request earlier today, the L-1 Consortium ("L-1") hereby retracts our letter to you dated July 15, 2010 and agrees to match Accenture's lowest bid price of 2.75 Rupees per allotted enrollment transaction.

We very much look forward to serving the UIDAI and participating in this important program.

Respectfully submitted,

Machiel van der Harst
Technology Officer,
L-1 Identity Solutions Operating Company

177 Broad Street, 12th Floor Stamford, CT 06901 203-504-1100

Nanawati, DDG

L-1 Identity Solutions Operating Company Private Limited

Annexure M

The Purchaser's order dated 30th July 2010

GOVT OF INDIA
PLANNING COMMISSION
UNIQUE IDENTIFICATION AUTHORITY OF INDIA
3rd Floor, Tower II, Jeevan Bharati Building,
Connaught Circus, New Delhi - 110001.

F.No. D-11018/14/Tech/10-UIDAI – 2155

Dated : 30.07.2010

To

M/s L1 Identity Solution Operating Company,
2, Frontline Grandeur,
14 Walton Road,
Bengaluru – 560 001

Sir,

Sub : Implementation of Biometric Solution for UIDAI - Order - Regarding.

Copy given in person 30/7/10

1. Please refer to the Technical and Commercial Bids submitted by you in response to Tender No. D-11018/14/Tech/10-UIDAI on the above mentioned subject and your revised financial proposal dated 16.07.2010.

2. M/s Accenture Services Pvt Ltd, M/s Satyam Computer Services Ltd (Mahindra Satyam) and M/s L1 Identity Solution Operating Company have been selected as the three Biometric Solution Providers for undertaking the scope of work as stated in "Section V – Scope of Work" of the Bid Document. It may be noted that the contract period would be 2 (two) years or 20 crores enrolment transactions, whichever is earlier.

3. Accordingly, we are pleased to place an order on **M/s L1 Identity Solution Operating Company**, for Implementation of Biometric Solution for UIDAI, for an estimated maximum **10.50 crore enrolment transactions**, at a cost of **Rs. 2.75 (Rupees Two and Paise Seventy Five Only) (Including taxes) per successful De-Duplication.**

4. It should be noted, that, subject to **"Clause 4 – Non-performance of the Biometric Solution and Rules of Allocation"** of **Section VIII** of the Bid Document, the allocation of further enrolment transactions will be done in accordance with the provisions of **"Clause 3 – Rules of Allocation"** of Section VIII of the Bid Document.

5. Following salient points, inter alia, as stipulated in **"Clause 3 – Rules of Allocation"** of Section VIII of the Bid Document should be noted:

 (i) the enrolment transactions in **Cycle 1**, i.e. from zero to 1 crore transactions shall be assigned to all the above mentioned three Biometric Solution Providers, meaning, each Biometric Solution Provider shall perform successful de-duplication check on the same 1 crore subjects;

L-1 Identity Solutions Operating Company Private Limited

(ii) from **Cycle 2 onwards**, daily volumes shall be allocated separately to Biometric Solution Providers as per **"Clause 3 – Rules of Allocation"** of **Section VIII** of the Bid Document.

(iii) for the purpose of allocation of volumes for **Cycle 2**, performance of the Biometric Solution during the last Ten Lakh enrolment transactions of Cycle;

(iv) the performance of the solution of each Biometric Solution Provider shall be measured at the end of each Cycle;

(v) from **Cycle 3 onwards (till Cycle 20)**, the allocation of volumes to Biometric Solution Provider shall be based on performance measurement made on their respective solution for all transactions undertaken in the previous Cycle.

(vi) The Biometric Solution of each Biometric Solution Provider **shall adhere to performance levels** as stated in **Clause 7.2 of Section III Attachment 1 – Draft Service Level Agreement** of the Bid Document.

6. **Stipulated Time Schedule**

The Project Timelines for Implementation of Biometric Solution shall be as stipulated in **"Clause 21 of Section III – General Terms and Conditions of the Contract"** of the Bid Document and should be strictly adhered to.

7. **Server, Storage and Other Infrastructure**

In accordance with **"Clause 8 of Section V – Scope of Work"** of the Bid Document you shall provide hardware for both primary and business continuity sites of UIDAI for de-duplications of an estimated capacity of 1 (one) Crore enrolments. The payment **of Rs. 5,00,00,000/- (Rupees Five Crores only)** towards delivery, installation, acceptance etc. will be made to you in accordance with **"Clause 45 - Payment Schedule"** of **"Section III – General Terms and Conditions of the Contract"** of the Bid Document.

8. **Acceptance of Solution**

It shall be your responsibility to draw the acceptance schedules, detailed acceptance tests, formats for acceptance reports and dissemination mechanism for the acceptance reports in consultation with the UIDAI and as specified in **Clause 10** of **"Section V – Scope of Work"** of the Bid Document.

9. **Training**

As part of system implementation, you shall impart training, to staff of UIDAI and of service providers as nominated by UIDAI, on the Biometric solution related to configuration, usage, API, performance tuning and measurement and Technical reports as indicated in **"Section V – Scope of Work"** of the Bid Document.

10. **Payment Terms**

Payments will be made to you in accordance with **"Clause 46 - Payment Schedule"** of **"Section III – General Terms and Conditions of the Contract"** of the Bid Document.

11. **Scope of Work and Deliverables**

The Scope of work, Deliverables etc. shall be as per **"Section V – Scope of Work"** of the Bid Document and the Technical Bid submitted by you.

P. P. Narayanan, DDG

L-1 Identity Solutions Operating Company Private Limited

12. **Warranty**

The Warranty shall be as per the agreement to be signed in this regard, and will be as described in the General Conditions of Contract attached thereto.

13. **Signing of Contract**

Based on your technical and financial bids, and the subsequent discussions held from time to time in this regard, a formal contract would be signed with you. Accordingly, you are requested to come for signing of the formal contract on receipt of this order. Pending signing of the formal Contract, this order shall be governed by the General Terms and Conditions of the Contract, Service Level Agreement and Work Allocation & Service Levels as stipulated in **Section II, Section III (Attachment 1) and Section VIII respectively** of the Bid Document.

14. **Performance Security**

Within 15 days after receipt of this order, **M/s L1 Identity Solution Operating Company** shall have to furnish the performance security to the UIDAI, in the form of a bank guarantee bond from a Nationalised Bank / Scheduled Bank, for an amount of **Rs. 3,38,75,000/- (Rupees Three Crores Thirty Eight Lakhs Seventy Five Thousand only)**, which shall be equal to 10 percent of the estimated value of the order (comprising of **Rs. 5 crores** of hardware costs and **Rs. 28.875 Crores** for estimated maximum **10.50 crore** enrolment transactions).

15. This issues with the approval of the Competent Authority.

Yours faithfully,

(Ajay Nandan)
Assistant Director General

B.P. Nanavati, DDG

L-1 Identity Solutions Operating Company Private Limited